BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN	)	Application No._____
CALIFORNIA EDISON COMPANY (U 338-E)	)	
for a Permit to Construct Electrical Facilities	)	
With Voltages Between 50 kV and 200 kV:	)	
Valley South Subtransmission Project	)	

PROPONENT'S ENVIRONMENTAL ASSESSMENT: VALLEY SOUTH 115 kV SUBTRANSMISSION PROJECT

VOLUME 4 of 4 (Part 2 of 5)

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Appendices (Volume 4)

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Appendix F: Biological Resources Assessment – Segment 1 and Biological Resources Assessment - Segment 2

Appendix F: Biological Resources Assessment – Segment 1 and Biological Resources Assessment – Segment 2

Biological Resources Assessment

Southern California Edison Company

Valley South 115 kV Subtransmission Line Project

Riverside County, California

USGS Bachelor Mountain, Murrieta, Romoland, and Winchester Quadrangles

March 2013

Prepared For:



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EXECUTIVE SUMMARY

Southern California Edison (SCE) has proposed the Valley South 115 kV Subtransmission Line Project, consisting of approximately 12-mile long Proposed and Alternative alignments, between the cities Murietta and Perris in southwestern Riverside County, California. The project is intended to meet the projected area load growth and service reliability for this portion of the county.

The project occurs in a predominantly rural landscape with discrete areas of high suburban density. Biological and other environmental surveys conducted in 2012 and 2013 detected 16 potentially jurisdictional wetlands / waters, five special status plant, and 35 special status animal species within 250 feet of the alignments. The entire project occurs within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area, developed pursuant to the California Natural Communities Conservation Planning Act. SCE intends to enroll in the MSHCP as a Participating Special Entity (PSE), which will allow it to participate in the conservation framework of this plan.

The project also occurs within the fee area of the 1996 Habitat Conservation Plan (HCP) area for the federally endangered Stephen's kangaroo rat (*Dipodomys stephensi*). SCE intends to obtain an Incidental Take Permit by paying the applicable fees for potential habitat impacts to this species.

Biological effects of the subtransmission line are addressed in the context of potential impact corridors approximately 150 feet wide. Estimated permanent impacts for the Proposed Project will account for about four percent of the corridor and a similar proportion is anticipated for the Alternative Project.

This document contains applicable measures to avoid, minimize, and reduce potential impacts. The implementation of these recommended measures is expected to reduce potentially significant impacts to a level below significance.

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ACRONYMS LIST

USACE	United States Army Corps of Engineers
APM	Applicant Proposed Measures
BBI	Bloom Biological Inc.
BCC	Birds of Conservation Concern
BMP	Best Management Practice
CAPS	Criteria Area Plant Species
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFPS	California Fully Protected Species
CFR	California Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CSSC	California Species of Special Concern
CWA	Clean Water Act
DBESP	Determination of Biological Equivalent or Superior Preservation
EIR	Environmental Impact Report
EPD	Environmental Programs Division
FESA	Federal Endangered Species Act
FWCA	Fish and Wildlife Conservation Act of 1980
GIS	Geographic Information Systems
GPS	Global Positioning System
HCP	Habitat Conservation Plan
kV	kilovolt
LSAA	Lake or Streambed Alteration Agreement
Manual	1987 Wetlands Delineation Manual
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
MSHCP	(Western Riverside County) Multiple Species Habitat Conservation Plan
msl	Mean Sea Level
NCCP	Natural Community Conservation Plan
NEPS	Narrow Endemic Plant Species
NMFS	National Marine Fisheries Service
NRA	Natural Resource Assessment
NRCS	Natural Resources Conservation Service

ACRONYMS LIST

NWI	National Wetlands Inventory
OHWM	ordinary high water mark
O&M	operation and maintenance
PEA	Proponent's Environmental Assessment
PM	Proposed Measures
Proposed Project	Valley South 115 kV Subtransmission Line Project
PSE	Participating Special Entity (for the MSHCP)
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SSC	Species of Special Concern
TRC	TRC Solutions, Inc.
TSP	Tubular Steel Pole
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements
WOUS	Waters of the United States

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1.0 INTRODUCTION

Southern California Edison Company (SCE) is a regulated public utility providing electric service to 14 million customers within a 50,000 square mile service area throughout central, coastal, and southern California. The Valley South 115 kilovolt (kV) Subtransmission Line Project (Proposed and Alternative Projects) is intended to meet the projected area load growth and service reliability for a portion of southwestern Riverside County.

SCE contracted with TRC Solutions, Inc. (TRC) in early 2012 to address biological resource issues for the Proposed Project in support of the Proponent's Environmental Assessment (PEA). The purpose of this Biological Resources Assessment is to present the findings of biological investigations and analyze Proposed Project impacts. This report will be included as a supplement to SCE's PEA submittal and filed as part of its application for a Permit to Construct (PTC) submitted to the California Public Utilities Commission (CPUC).

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2.0 PROPOSED PROJECT DESCRIPTION

SCE is proposing the construction of the Proposed or Alternative Project to serve current and projected demand for electricity and maintain electric system reliability in portions of Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Modification of SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.
- Construction of a new 115 kV Subtransmission Line originating at SCE's existing Valley 500/115 kV Substation and terminating at a Tubular Steel Pole (TSP) which is located south of the intersection of Leon and Benton Roads, hereinafter referred to as "Terminal TSP." The Terminal TSP is the common point of the three-point existing 115 kV subtransmission line Valley-Auld-Triton; thus the project would create the Valley-Auld No. 2 and Valley-Triton 115 kV subtransmission lines. The new 115 kV Subtransmission Line would be approximately 12 miles in length.
- Installation of communication equipment at Triton and Valley Substations to support the new 115 kV Subtransmission Line.

Displayed in Figure 1, Vicinity Map, are the Valley South 115 kV Subtransmission Line Project (Proposed Project) and Alternative 115 kV Subtransmission Line Project (Alternative Project). The Proposed Project survey area is defined by the 250-foot buffer surrounding the Proposed and Alternative projects (500-foot total width).

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3.0 REGULATORY BACKGROUND

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act (16 United States Code [USC] § 153 et seq.)

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973. FESA protects plants and wildlife that are listed as "endangered" or "threatened" by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). It also requires the evaluation of effects to "proposed" and "candidate" species. Federally endangered consists of animal or plant species, subspecies or varieties in danger of extinction throughout all or a significant portion of their range. Federal threatened consists of species, subspecies or varieties likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Federal proposed endangered or threatened are those species, subspecies or varieties for which a proposed regulation, but not a final rule, has been published. Federal candidate species, subspecies or varieties are being considered for listing as endangered of threatened, but a proposed regulation has not yet been published.

Section 9 of FESA prohibits the "take" of endangered wildlife, where take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] Section 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 United States Code [USC] 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS and/or NMFS if their actions, including permit approvals or funding, could adversely affect an endangered plant or wildlife species or its habitat, or could adversely affect designated critical habitat. Through consultation and the issuance of a biological opinion, the USFWS and/or NMFS may issue an "incidental take statement" allowing take of the species, provided the action will not jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of habitat of such species. Section 10 of FESA provides for issuance of incidental take permits to private parties without a federal nexus provided a Habitat Conservation Plan (HCP) is developed.

Applications of the FESA pertaining specifically to the Proposed and Alternative Projects occur in the form of an existing HCP for the endangered Stephens's Kangaroo Rat (*Dipodomys stephensi*) in western Riverside County, which was approved by the USFWS in 1996. Several species listed as federally threatened or endangered occur in the area of the Proposed Project, including the threatened coastal California gnatcatcher (*Polioptila californica californica*), endangered Quino checkerspot (*Euphydryas editha quino*), and the endangered least Bell's vireo *(Vireo bellii pusillus*). In accordance with the listing process, specific areas of Critical Habitat for some species have been designated in Riverside County and several of these overlap the area of the Proposed and/or Alternative Project.

3.1.2 Federal Clean Water Act (33 USC § 1251 et seq.)

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the United States (WOUS) without a permit from the United States Army Corps of Engineers (USACE). In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into WOUS, to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. A Water Quality Certification or waiver pursuant to Section 401 is required for Section 404 permit actions, and is issued by the Regional Water Quality Control Board (RWQCB).

"Discharges of fill material" are defined as the addition of fill material into WOUS including, but not limited to, the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; or fill for intake and outfall pipes and subaqueous utility lines (33 CFR Section 328.2[f]). The definition of WOUS includes rivers, streams, estuaries, the territorial seas, ponds, lakes, mudflats, sandflats, sloughs, wet meadows, and wetlands. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of water is present. A brief overview of methods for delineating wetlands and non-tidal waters are described below.

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR Section 328.3[b]). The methodology set forth in the 1987 Wetlands Delineation Manual (Manual) (USACE, 1987) and the Arid West Supplement (USACE, 2006, 2008) generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics, often referred to as a 'three-parameter wetland.'

The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 CFR Section 328.4(c) (1)). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

3.1.3 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The federal Migratory Bird Treaty Act (MBTA), first enacted in 1916, prohibits any person, unless permitted by regulation, to:

> *…pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment,*

> *transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird (16 USC 703).*

As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under the MBTA to directly kill, or destroy a nest of, nearly any bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA.

3.1.4 The Bald and Golden Eagle Protection Act (16 USC § 668)

The Bald and Golden Eagle Protection Act prohibits anyone, unless permitted by the Secretary of the Interior to:

> *…take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof. "Take" is defined as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means: to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. This definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment (16 U.S.C. 668-668c).*

3.1.5 Birds of Conservation Concern

Birds of Conservation Concern (BCC) is a USFWS list of bird species identified to have the highest conservation priority, and with the potential for becoming candidates for listing as federally threatened or endangered. The chief legal authority for BCC is the Fish and Wildlife Conservation Act of 1980 (FWCA). Other authorities include the FESA, the Fish and Wildlife Act of 1956, and the Department of the Interior 16 USC 701. The 1988 amendment to the FWCA (Public Law 100-653, Title VIII) requires the Secretary of the Interior, through the USFWS, to "identify species, subspecies, and populations of all migratory nongame birds that,

without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973" (USFWS, 2008a).

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act Significance Criteria (California Fish and Game Code § 1802)

Section 15064.7 of the *California Environmental Quality Act (CEQA) Guidelines* encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the Initial Study checklist contained in Appendix G of the *CEQA Guidelines*. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if a project would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional or state HCP.

An evaluation of whether or not an impact on biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Significant impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. This is necessary because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis. Fish and Game (CFG) Code 1802 states:

> *The department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. The department, as trustee for fish and wildlife resources, shall consult with lead and responsible agencies and shall provide, as available, the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used in the California Environmental Protection Act (Division 13 (commencing with Section 21000) of the Public Resources Code).*

3.2.2 California Endangered Species Act (California Fish and Game Code § 2050 et seq.)

The State of California enacted the California Endangered Species Act (CESA) in 1984. California state endangered animals or plants are in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (as defined by section 2062 of the Fish and Game Code). California State threatened animals or plants, although not presently threatened with extinction, are likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter (as defined by section 2067 of the Fish and Game Code). California State candidate plants or animals are under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list (as defined by section 2068 of the Fish and Game Code). The California Native Plant Protection Act affords the CFG Commission the authority to designate native plants as endangered or rare and protects such endangered or rare plants from take. Typically, special status plants are considered those on lists 1A, 1B, and 2: California Rare Plant Rank 1A is for plants presumed Extinct in California; California Rare Plant Rank 1B is for plants that are rare, threatened, or endangered in California and elsewhere; California Rare Plant Rank 2 is for plants that are rare, threatened, or endangered in California but more numerous elsewhere; California Rare Plant Rank 3 is for plants about which we need more information; and California Rare Plant Rank 4 is for plants of limited distribution. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the "take" prohibitions to species proposed for listing (called "candidates" by the State). "Take" is defined in Section 86 of the CFG Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2080 of the CFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Under CFG Code Section 2081, CESA allows CDFW to authorize exceptions to the state's prohibition against "take" of a listed species (except for designated "fully protected species") if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA. Section 2080.1 of the CFG Code allows for "take" once an applicant obtains a Federal Incidental Take Statement, submits it to the CDFW Director in writing, and receives a confirmed determination that the federal statement is "consistent" with CESA (a Consistency Determination letter). There is a 30-day window for issuance of a

Consistency Determination letter. If, however, the Federal Incidental Take Statement is not determined to be consistent with CESA, then a State Incidental Take Permit under Section 2081(b) of the CFG Code must be applied for. Both sections 2081 and 2080.1 require that take be minimized and fully mitigated.

3.2.3 California Fully Protected Species (California Fish and Game Code §§ 3511, 4700, 5050, and 5515)

The State of California first began to designate California Fully Protected Species (CFPS) prior to the creation of CESA and FESA. Lists of CFPS were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most CFPS have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFG Code Sections 3511, 4700, 5050, and 5515) state that CFPS may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

In September 2011, the California Legislature sent the Governor legislation authorizing CDFW to permit the incidental take of 36 fully protected species pursuant to an NCCP approved by CDFW (Senate Bill 618 [Wolk]). The legislation gives CFPS the same level of protection as is provided under the NCCP Act for endangered and threatened species (CFG Code Section 2835). The NCCP Act, enacted in the 1990s, authorizes the incidental take of species "whose conservation and management" is provided for in a conservation plan approved by CDFW.

3.2.4 California Species of Special Concern (California Fish and Game Code § 2067)

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" (SSC) developed by CDFW. The list tracks species in California whose numbers, reproductive success, or habitat may be in decline and are potentially at risk to become threatened or endangered. Title 14, CCR Sections 670.2 and 670.5 list the species, subspecies and varieties of California native plants that are listed as threatened or endangered (as defined by section 2067 of the Fish and Game Code) or rare (as defined by section 1901 of the Fish and Game Code). CDFW states an SSC is a species, subspecies, or distinct population of a fish, amphibian, reptile, bird or mammal native to California that currently satisfies one or more of the following, not necessarily mutually exclusive, criteria: extirpated from the State or, in the case of birds, in its primary seasonal or breeding role; is listed as Federally, but not State, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed; is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; has naturally small populations exhibiting high susceptibility to risk from any factor, that if realized, could lead to declines that would qualify it for State threatened or endangered status.

3.2.5 California Fish and Game Code for Protection of Birds

Section 3503 of the CFG Code states:

> *It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.*

Section 3503.5 of the CFG Code states:

> *It is unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

Section 3513 of the CFG Code states:

> *It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the interior under provisions of the Migratory Treaty Act.*

Disturbance activities that result in abandonment of an active bird-of-prey nest in areas adjacent to the disturbance may also be considered a violation of the CFG Code.

3.2.6 California Native Plant Protection Act and California Native Plant Society (California Fish and Game Code §§1900-1913)

The California Native Plant Protection Act of 1977 affords the CFG Commission the authority to designate native plants as endangered or rare and protects such endangered or rare plants from take. In addition, plants that are not state-listed, but meet the standards for listing, are also protected under CEQA (*CEQA Guidelines, Section 15380*). The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or that are otherwise threatened with extinction. Potential impacts to populations of CNPS listed plants receive consideration under CEQA review. Typically, special status plants are considered those on lists 1A, 1B, and 2. The definitions for each of the CNPS listings are below:

- California Rare Plant Rank 1A: Plants presumed Extinct in California
- California Rare Plant Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- California Rare Plant Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- California Rare Plant Rank 3: Plants about which we need more information - A Review List

- California Rare Plant Rank 4: Plants of limited distribution - A Watch List

3.2.7 California Lake and Streambed Alteration Program (California Fish and Game Code 1600 through 1616)

A Lake and Streambed Alteration Agreement (LSAA) Program Notification Package is required to be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, provides the applicant with a proposal for measures to protect affected fish and wildlife resources. The final proposal on which CDFW and the applicant agree is an LSAA signed by both parties. Often, projects that require an LSAA also require a permit from the USACE under Section 404 of the CWA and the RWQCB under Section 401 of the CWA. In these instances, the conditions of the Section 404/401 permits and the LSAA may overlap.

3.2.8 Porter-Cologne Water Quality Act (California Water Code, Division 7)

The State Water Resources Control Board has authority over state water rights and water quality policy. The Porter-Cologne Act established nine RWQCB's to oversee water quality on a day-to-day basis at the local/regional level. The Valley South 115 kV Subtransmission Line Project occurs within the jurisdictions of both the San Diego and Santa Ana RWQCB's. Regional Boards prepare and periodically update Basin Plans which establish beneficial uses of water designated for each water body to be protected; water quality standards, known as water quality objectives, for both surface water and groundwater; and actions necessary to maintain these standards in order to control non-point and point sources of pollution to the State's waters. Permits issued to control pollution must implement Basin Plan requirements, taking into consideration beneficial uses to be protected. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate regional board. No discharge may take place until the RWQCB issues waste discharge requirements or a waiver of the waste discharge requirements, and 120 days have passed since complying with reporting requirements. Under the auspices of the U.S. Environmental Protection Agency, the State Board and RWQCBs have the responsibility of granting Clean Water Act National Pollutant Discharge Elimination System permits for certain point-source discharges.

3.2.9 Natural Communities Conservation Planning Act (California Fish and Game Code § 2800 et seq.)

The NCCP Act was established in 1991 to provide a regulatory mechanism for encouraging and coordinating multiple-species conservation efforts at large spatial scales, providing an integrated alternative to traditional, single-species conservation on the local (e.g., project level) scale. The NCCP provides a process for collective conservation efforts by multiple jurisdictions, with the objective of engendering more effective conservation at the regional and state levels. Biological conservation is inherently integrated with planned human development under the NCCP. The NCCP process is hierarchical, recognizing regions, sub-regions, areas, and sub-areas, with

specific planning at the lowest (most local) level, but with coordination at higher organizational levels. NCCP's typically also satisfy federal HCP requirements for listed species occurring within the particular plan areas. Approval of an NCCP results in the issuance of an incidental take statement for each species determined to be "covered" by the provisions of the plan. The authority to approve take at the project level is delegated to the administering jurisdiction, with oversight by wildlife agencies. The sub-area planning process has also been applied to linear utilities (e.g., energy companies, water districts).

3.3 LOCAL REGULATIONS

3.3.1 Stephen's Kangaroo Rat Habitat Conservation Plan

As mentioned in section 3.1.1, the Riverside County Habitat Conservation Agency (RCHCA) adopted a separate HCP for Stephens' kangaroo rat in 1996, prior to the approval of the MSHCP (see below). This plan remains in effect and must be complied with independently from the MSHCP. Stephens' kangaroo rat is federally listed as endangered and state listed as threatened. As with the MSHCP, participants of the HCP can incorporate projects into the incidental "take" permit for Stephens's kangaroo rat if the project complies with the requirements of the plan. Payment of the mitigation fees and compliance with the HCP provides full mitigation under CEQA, NEPA, the CESA, and FESA for impacts to Stephens' kangaroo rat. Figure 2 shows that the entire project is located within the HCP fee area, which is defined as areas within the greater HCP area, but beyond designated preserve areas.

3.3.2 MSHCP

The Valley South 115 kV Subtransmission Line Project occurs in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), a comprehensive, multi-jurisdictional NCCP developed pursuant to the NCCP Act and an HCP pursuant to Section 10(a)(1)(B) of the FESA, which addresses conservation of species and their associated habitats in western Riverside County. The MSHCP was approved by the County of Riverside, local jurisdictions, and various regulatory agencies on June 17, 2003. The Western Riverside County Regional Conservation Authority (RCA) was created in 2004 to implement the MSHCP. The area administered by the MSHCP comprises approximately 1.26 million acres west of and including a portion of the mountains that divide the coastal slope from the desert.

The conservation objective of the MSHCP is preservation of approximately 500,000 acres of natural and semi-natural vegetation and habitats. About 347,000 acres (70%) of this preservation will be accomplished on existing public / quasi-public lands. The remaining 153,000 acres will be assembled from suitable portions of private lands throughout the plan area through zoning, conservation easements, and acquisition. Preserve assembly will observe conservation biology principles of incorporating large, core natural areas and biological landscape linkages. The collective area from which the 153,000 acres will be derived constitutes the Criteria Area, within which area-specific criteria for conservation based on careful examination of species occurrences, landscape features, and conceptual preserve design will be applied. The criteria are designed to achieve overall conservation goals at various spatial scales, from local to within and beyond the MSHCP area. An unbiased system (irrespective of political, property, or biological

boundaries) of 0.25-mile square Criteria Cells was applied to the Criteria Area to provide a reference frame for conservation planning based on the distribution of critical biological and landscape features. Criteria Cells are the finest level planning unit in the conservation scheme described below.

Biological conservation within the Criteria Area of the MSHCP area is identified, planned, and achieved through a hierarchical system of planning units (Dudek 2003). The largest scale of these units consists of a set of irregular Area Plans, which correspond to Area Plan boundaries of the Riverside County General Plan and therefore occur irrespective of biological landscape features. Within these areas, single Criteria Cells or clusters of cells are grouped into Subunits by common ecological features. Section 3.3 of the MSHCP describes the Area Plans in detail, identifying target preservation acreages, core / linkage features, key habitat types, and relevant Planning Species for each.

The Proposed and Alternative Projects occur within the boundaries of four Area Plans: Mead Valley, Harvest Valley / Winchester, Sun City / Menifee Valley, and Southwest Area. The proximity of the Proposed and Alternative Projects to Area Plan Subunits and Criteria Cells is briefly described in this section. Figure 2, Proposed and Alternative Projects in Context of MSHCP Planning Areas Map, shows the location of the Proposed and Alternative Projects relative to Area Plans, Criteria Cell Groups, and Biological Cores and Linkages. Figure 3, MSHCP Criteria Cells Map shows the Criteria Cell boundaries. The potential effects from the Proposed and Alternative Projects on conservation criteria within each of the four Area Plans are addressed in greater detail in section 7.0, Proposed Project Impacts. The only representation of the Proposed Project within the Mead Valley Area Plan consists of one paved material staging yard in a developed area in southwestern Perris. This site is located approximately 0.2 miles northwest of several criteria cells occurring in farmland. The northern approximately 75% of the Proposed Project, as well as several outlying material staging yards, occur within the Harvest Valley / Winchester Area Plan or along its boundary with the Sun City / Menifee Valley Area Plan. Although this long section of the alignment passes through or adjacent to extensive agricultural land and native vegetation, this area is beyond the Criteria Area. The section of the Proposed Project south of Scott Road passes through a portion of the Criteria Area and several Criteria Cells within the Southwest Area Plan. The Alternative Project passes through portions of the Sun City / Menifee and Southwest Area Plans, intersecting a large cluster of Criteria Cells.

The MSHCP recognizes “coverage” of species under the planning process as equivalent to adequate, long-term conservation of those species anticipated under full implementation of the plan, which is also designed to account for integrated human development on the landscape. The plan covers 146 species, including many locally sensitive and special status species. Among these, 106 are adequately conserved with no additional surveys or conservation required. The remaining 40 species, including six riparian/riverine species, 14 narrow endemic plant species (NEPS), 13 criteria area plant species (CAPS), three amphibians, the burrowing owl, and three mammals, are covered with conditional survey requirements. NEPS are highly restricted by their habitat affinities, edaphic requirements or other ecological factors and specific conservation measures have been identified.

Maps of the aforementioned designated survey areas for these species are provided in Section 6.0 of the MSHCP. Species-specific surveys are required for projects occurring within MSHCP-designated survey areas and if specific habitat conditions are present. If any of the species are present within their respective Criteria Areas, avoidance of 90 percent of those portions of the collective area that provides for long-term conservation value for those species is required until the MSHCP has met its conservation objectives for those species (MSHCP, Table 9-2). If 90 percent avoidance cannot be achieved, a Determination of Biological Equivalent or Superior Preservation (DBESP) analysis is required. Despite the take authorization afforded through the NCCP process, the MSHCP strives for avoidance and minimization of adverse effects of development actions to sensitive species and habitats through survey, assessment, and planning.

In terms of SCE compliance with the above species conservation plans, since the Proposed and Alternative Projects occur entirely within the areas of the MSHCP and Stephens kangaroo rat HCP,

SCE will specifically comply with all regulations and policies outlined in these plans, including:

a. Obtaining authorization for enrolled status under the MSHCP as a Participating Special Entity (PSE) from the Western Riverside County Regional Conservation Agency (RCA) by submittal of information required for the RCA to review the project's consistency with MSHCP and by payment of the mandatory mitigation fee. Payment of the fee and a determination of consistency with the requirements of the MSHCP is intended to provide full mitigation under CEQA, NEPA, CEA and FESA for potential impacts to the species and habitats covered by the MSHCP.

b. As a PSE, SCE would conserve at least 90 percent of each population of each species covered under the MSHCP that is determined to occur within the area potentially affected by the Valley South 115 kV Subtransmission Line Project construction activities. If it is determined that at least 90 percent conservation of sensitive species populations is not achievable, then SCE would provide additional compensatory mitigation via a Determination of Biologically Equivalent or Superior Preservation (DBESP), as set forth in Section 6.2.3 of the MSHCP.

c. The payment of Local Development Mitigation Fees and other relevant fees as set forth in Section 8.5 of the MSHCP.

d. As part of the requirements set forth in MSHCP, SCE, as a PSE, shall also contribute to Plan implementation through payment of a fee based upon the type of proposed activity, which shall be applicable to all activities in the Plan Area. For Regional Utility Projects, such as the Valley South 115 kV Subtransmission Line Project, PSE's shall pay a fee in the amount of 5 percent (5%) of total capital costs for permanent impacts as may be agreed to by the RCA. For portions and features of the project that result in temporary impacts and disturbance, PSE's shall pay a fee in the amount of three percent (3%) of total capital costs, as may be agreed to by the RCA.

e. Compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, set forth in Section 6.1.2 of the MSHCP.

f. Compliance with the policies for the Protection of Narrow Endemic Plant Species (NEPS) set forth in Section 6.1.3 of the MSHCP.

g. Compliance with special status species survey requirements, as set forth in Section 6.3.2 of the MSHCP.

h. Compliance with the Urban/Wildlands Interface Guidelines, as set forth in Section 6.1.4 of the MSHCP.

i. Compliance with process for mitigation and/or contribution to Reserve Assembly for future facilities, as set forth Section 6.1.6 of the MSHCP.

j. Compliance with Stephens kangaroo rat HCP by paying the required fee, since both the Proposed and Alternative Projects occurs within the Stephens kangaroo rat HCP fee area. As with the MSHCP, payment of the fee is intended to provide full mitigation for impacts to Stephen's kangaroo rat under CEQA, NEPA, CESA and FESA.

SCE will be required to abide by the specific performance measures within the plans that direct how projects are approved, constructed and operated. If aspects of the Proposed and Alternative Projects were to be conducted outside the conditions imposed by these plans, then the projects would be in conflict with those plans. SCE's compliance with both the MSHCP and Stephens kangaroo rat HCP are anticipated to result in no impacts.

3.3.3 County and City Regulations

Several regulations and ordinances at the county and city levels protect several kinds of trees for various purposes. The County of Riverside established *Oak Tree Management Guidelines* in 1993 (revised in 1999) that have been incorporated in the MSHCP. These guidelines are intended to minimize losses to native oaks by development siting and mitigation. They do not apply to other tree species.

The County of Riverside has also passed Ordinance 559.7, *Regulating the Removal of Trees* (1997, as amended from original approval in 1976), which applies only to native tree species occurring above 5,000 feet in elevation. The Proposed and Alternative Projects occur below 5,000 feet. Riverside County does not observe any "Heritage Tree" protective measures.

The City of Menifee has not yet adopted a General Plan following its incorporation in 2008. The city will defer to the Riverside County General Plan and component Area Plans during the interim period of General Plan development (City of Menifee, 2013).

The City of Murietta General Plan (2035 FEIR, July 2011) references the MSHCP Implementation Agreement (IA), which lists the specific obligations required by enrolled cities in order to be active participants in this NCCP Sub-regional Plan. One of the obligations includes amending General Plans to implement the requirements of the MSHCP for public and private development projects. Other obligations include the following:

- Establish City representation on the Western Riverside County Regional Conservation Authority (RCA) Board of Directors and Reserve Management Oversight Committee (MSHCP Sections 6.6.2 and 6.6.4);
- Collect Local Development Mitigation Fees and Long-term Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) fees, and transmit to RCA quarterly (MSHCP Section 8.5), and Riverside County Habitat Conservation Agency (RCHCA) quarterly for SKR fees based on the Seventh Amendment to the RCHCA Joint Powers Agreement;
- Meet the local Reserve Assembly contribution obligations through the Habitat Acquisition and Negotiation Strategy (HANS) for private development projects (MSHCP Section 6.1.1), for public projects at least 1:1 habitat mitigation ratio, and payment of Local Development Mitigation Fees for commercial and industrial development (MSHCP Section 7.0);
- Comply with Joint Project Review process and annually transmit information on all projects within Criteria Cells (MSHCP 6.6.2);
- Siting and Design Guidance and Best Management Practices for Covered Activities (MSHCP Section 7.0 and MSHCP Appendix C);
- Riparian/Riverine and Fairy Shrimp Habitat (MSHCP Section 6.1.2), Narrow Endemic Plants (MSHCP Section 6.1.3), Criteria Area Survey Species (MSHCP Section 6.3.2), and Urban/Wildlands Interface Guidelines (MSHCP Section 6.1.4);
- Enforce terms of project approvals for public and private projects using applicable land use permit enforcement procedures and practices to ensure compliance with MSHCP, Permits, and Implementation Agreement; and
- Manage MSHCP Conservation Area property and conservation easements owned or leased by the City (MSHCP Sections 5.0 and 8.0).

The Murrieta Development Code (MDC) Chapter 16.42, Tree Preservation, provides regulations for the protection, preservation, and maintenance of native Oak, Sycamore, and Cottonwood trees, trees of historic or cultural significance, groves and stands of mature trees, and mature trees in general, that are associated with proposals for development. These provisions are also intended to perpetuate these trees through the replacement of trees removed as a result of a new development. Pursuant to MDC Chapter 16.42, protected trees include any of the following:

- Native oaks with diameters at breast height of four inches or greater. Smaller trees may also be protected under special circumstances as determined by the Director.
- Trees of historical or cultural significance as identified by Council resolution.
- Significant groves or stands of trees.
- Mature trees located on a parcel of one acre or more. Smaller trees may also be protected under special circumstances as determined by the Director.
- Any tree required to be planted or preserved as environmental mitigation for a discretionary permit.

No person is allowed to remove, cut down, or otherwise destroy a protected tree, unless a Tree Removal Permit has been approved by the Director of the Department of Planning. All development projects within the City are required to recognize through project design the desirability of preserving protected trees to the greatest extent feasible. The design of proposed grading and other improvements shall also reflect certain measures such as providing sufficient growing areas, minimizing disruption or removal of root zones, fencing of trees at or beyond the drip line during grading and construction, and minimizing all cutting, filling, or compaction of soils within the drip line, among other measures.

Resolution Number 03-1245 makes responsible agency findings pursuant to CEQA for the MSHCP/NCCP and approves the Western Riverside County MSHCP/NCCP and IA. Additionally, this Resolution adopts the environmental findings pursuant to CEQA and a Statement of Overriding Considerations.

Relevant policies under the Murietta General Plan include:

- LU-22.3 Encourage development that minimizes impacts to existing water courses, mature trees, and natural features as much as possible. In those cases that these areas/features are impacted, the final design should provide adequate mitigation on-site and/or in nearby areas.

LU-22.4 Encourage healthy and structurally sound, existing groves of eucalyptus and other mature non-native trees located west of Warm Springs Creek to be considered a visual asset to the area, and should be conserved and maintained to the maximum degree practicable.

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4.0 PROPOSED PROJECT AREA OVERVIEW

4.1 CLIMATE AND WEATHER

The Valley South 115 kV Subtransmission Line Project is located within a Mediterranean climate region characterized by warm, dry summers and mild, wet winters. In summer, day temperatures often reach or exceed 100 degrees Fahrenheit and overnight winter temperatures can drop below freezing. Average annual daytime temperature ranges for the area are fairly moderate, ranging from 50 degrees Fahrenheit to 80 degrees Fahrenheit. Average total precipitation for the area is approximately 10 to 12 inches per year (Western Regional Climate Center, 2012). Rainfall typically occurs during the winter months, November through February, and consists of large storm events providing the bulk of the precipitation.

The 2011-2012 winter rainy seasons was unusual in that a pattern of numerous small, late storm events occurred in place of more typically fewer, large storm events throughout the season. Additionally, the total rainfall amount of approximately 8 cumulative inches was below the seasonal average. Due to below-average precipitation in 2011-2012, the germination and flowering of many plant species in coastal southern California was impaired. Monitoring of reference sites in early 2012 revealed generally low germination, stunted growth, and/or reduced flowering of plants associated with ephemeral wetlands and restricted soils such as alkali and clay types (D. Bramlet pers. comm., 2012). Particularly affected were annual and early blooming species (D. Bramlet pers. comm., 2012).

4.2 TOPOGRAPHY, VEGETATION, AND LAND USE

The Proposed and Alternative Projects occur within the predominantly rural and natural landscape comprising the interior valleys, rolling hills, and rugged peaks between the Santa Ana and San Jacinto Mountain ranges of western Riverside County. The project alternatives primarily follow existing roadways that pass through relatively gradual terrain of the Perris, Salt Creek, Paloma, and French Valleys, as well as portions of the northeast Sedco Hills. Figure 4, Location Map shows the terrain traversed by the Proposed Project on United States Geological Survey (USGS) topographic maps. The southern portion of the Proposed Project survey area is drained by Warms Springs Creek and the northern portion by Salt Creek. Portions of the valleys have no drainage outlets to the ocean. See the Jurisdictional Waters and Wetlands Delineation Report (Appendix A) for detailed information.

The location of the Proposed Project on the east-side rain shadow of the coastal mountains, in combination with relatively low elevation range of 1,300 to 2,600 feet above sea level, imposes arid conditions evident in the vegetation. Xeric scrub vegetation dominates the steeper terrain, whereas the valley bottoms support mostly herbaceous types, especially grasslands. Much of the steep terrain is extremely rocky, with many large granitic outcrops. Drainages and basins support willow-dominated riparian growth and/or freshwater marsh.

Human land uses in this area have historically consisted primarily of extensive agricultural conversion of the valley bottoms to dry grain and irrigated crops, as well as livestock grazing. Human dwellings are sparse and widely separated and typically associated with non-native tree

and shrub plantings. Although relatively steep terrain within the Proposed Project survey area supports a high percentage of native scrub vegetation, much of it shows evidence of past disturbance, such as through grazing or fire. The topography and/or vegetation of most drainages bear some evidence of past disturbance from crop cultivation, vegetation removal, channelization, or grazing. Much of the current riparian vegetation appears to be re-established growth following earlier disturbance. Vegetation on several drainages adjacent to recent suburban development have been actively enhanced or restored.

Human-caused modifications to the landscape include artificial water reservoirs and large tracts of non-native trees. Dense suburban and commercial development with associated landscaping and water control features constitute the most recent addition to the landscape of the Proposed Project. Dense development accounts for approximately a quarter of the area mapped within the 250-foot survey buffer. These developments occur as discrete areas within the matrix of rural or undeveloped lands.

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5.0 METHODS

5.1 DEFINITION OF PROPOSED PROJECT ASSESSMENT / SURVEY AREA

Background research and field surveys were focused on the area within a 250-foot buffer of the estimated center line of the proposed transmissions lines (500-foot total width), describing a combined Proposed and Alternative Project survey area of approximately 1,064 acres. The addition of several proposed outlying material staging and work yards that either protrude from or occur wholly beyond the 500-foot buffer result in a total survey area of approximately 1,118 acres. The approximate boundaries of this survey buffer are shown in Figure 4. Data base records were examined from a wider area, as described below, to provide broader context. Field surveys either exceeded this buffer or occurred within a narrower buffer, as appropriate to the scale of the biological phenomena, as discussed below.

5.2 LITERATURE REVIEW

Prior to performing the biological field surveys, literature research was conducted on special status species distribution and records, conservation planning efforts, protected areas, designated USFWS Critical Habitat, and geomorphic, hydrological, and edaphic (soil) conditions within the Proposed and Alternative Project areas and surroundings. Specifically, records from the CDFW California Natural Diversity Database (CNDDB, 2012) and the CNPS Inventory of Rare and Endangered Plants (CNPS, 2012) within 3 miles of the alignments were reviewed for documented occurrences of special status species or habitats. Database records were supplemented by inspection of topographic maps, aerial imagery, previous extensive vegetation maps from the MSHCP, and soils maps to further assess habitat conditions for an array of species within the survey areas. The Riverside County Integrated Project (RCIP) report generator internet site (Riverside County, 2013) was searched by applicable Assessor's Parcel Numbers (APNs) for required species or other taxon surveys.

Special status species include all federal- and state-listed endangered and threatened species, candidates for listing, species proposed for listing, BCC's, CFPS, SSC, CNPS rare or endangered species, and special status species covered under the MSHCP. Based on this research, lists of known and potential special status plant and animal species within the Proposed Project survey area were prepared. Potential for species to occur within the Proposed Project survey area was assessed on the basis of known geographic distribution and/or by the presence of habitat requirements (e.g., roosting, nesting, or foraging habitat, specific soil type, permanent water source) within the boundaries of the Proposed and Alternative Project survey areas.

Field aerial photograph maps at a scale of 1:2400 (1 inch = 200 feet) were created for the entire survey area (combined alternatives) for recording of field observations. Results of the literature review are presented in section 6.1.

5.2.1 Critical Habitat

USFWS critical habitat areas for federally listed species within three miles of the Proposed Project survey area were searched using Geographic Information Systems (GIS) shapefiles provided by the USFWS.

5.2.2 Soils

Soil types occurring in the Proposed and Alternative Project survey areas were determined by examination of GIS data obtained from the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) online Soil Survey (NRCS, 2011).

5.3 FIELD SURVEYS

The following species, taxon groups, and natural resources were specifically surveyed within or adjacent to the Proposed and Alternative Project survey areas. Surveys were not conducted for the federally endangered Quino checkerspot or federally endangered fairy shrimp species due to poor weather-mediated habitat conditions, as described below, but potential habitat for these species was assessed and mapped in conjunction with vegetation mapping performed in the spring of 2012. A continuous inventory of plant and animal species detected within the Proposed Project survey area was conducted opportunistically in conjunction with all field study phases. Results of field surveys are presented in section 6.2.

5.3.1 Vegetation and Other Land Cover Types / Habitat Assessment

TRC biologists mapped vegetation and other land cover types within 250 feet of estimated transmission center lines, as well as within outlying work areas, on high-resolution, 1:2400 scale aerial photographs in April of 2012. Vegetation map polygons were drawn in the field and assigned to standard categories according to Holland (1986), with modifications by Oberbauer et al. (2008). Additionally, distinct structural-compositional vegetation sub-types below the standard categories were distinguished and mapped where they provided more detailed information on potential habitat for special status plant and animal species, thus allowing the vegetation mapping to provide the basis for habitat assessments to guide various focused survey efforts. The Holland-Oberbauer vegetation types were also translated to the classification scheme by Sawyer et al. (2009) for versatility. Where correspondence between the component plants species of an observed polygon and standard vegetation categories was low, the polygon was mapped based on functional processes (e.g., presence of surface water, slope aspect) rather than floristics. The “disturbed” modifier was used where appropriate. Vegetation polygons were digitized with GIS technology.

5.3.2 Jurisdictional Wetlands / Waters

TRC biologists evaluated and mapped all potential wetland and jurisdictional water features within the 500-foot Proposed and Alternative Project survey areas in April of 2012. Prior to the field delineation, a 1:2400 color aerial photograph, the USFWS National Wetland Inventory (NWI) (USFWS, 2011a), United States Department of Agriculture, Natural Resource Conservation Service soil mapping data (NRCS, 2012), historic aerials (Google, 2012), and the

United States Geological Service Bachelor Mountain, Murrieta, Romoland, and Winchester topographic maps (USGS, 1973, 1979a, 1979b, and 1979c) were examined to determine the locations of potential areas of jurisdiction.

Field work involved observing the entire Proposed and Alternative Project survey areas to identify hydrologic, vegetation, and geomorphic indicators of potentially jurisdictional waters and wetland features, which were delineated according to the technical guidelines provided in the Manual and the Arid West Supplement to identify and delineate wetlands that may be subject to regulatory jurisdiction under Section 404 of the CWA. Wetlands were identified by the "three-factor" approach, in which criteria for wetland hydrology, hydrophytic vegetation, and hydric soils must all be met to conclude that an area is a wetland, as described in the Manual and described in greater detail in the TRC report dated May 2012 (see Appendix A).

WOUS were identified pursuant to criteria outlined in Sections 401 and 404 of the CWA, including but not limited to the presence of an OHWM and connection to a downstream jurisdictional water body. The OHWM was determined pursuant to the *Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (USACE, 2008) by observing signs of flow including, but not limited to shelving, drift lines, and disturbed vegetation. "Waters of the State" were identified pursuant to criteria outlined in Section 1600 of the CFG Code, including the presence of a defined bed and bank and associated vegetation. Drainages that appeared to meet the criteria for WOUS or "waters of the State" were considered potentially jurisdictional as any determination is subject to verification by the regulatory agencies.

Visible limits of wetland/water features were mapped on 1:2400 color aerial photographs and/or recorded with a Trimble Global Positioning System (GPS) hand-held unit. Field mapping was supplemented with standard data forms and notes documenting the characteristics of the features. Field data were digitized using GIS to determine acreages.

5.3.3 Special Status Plant Species

A field survey for special status plants was conducted within the Proposed and Alternative Project survey areas in accordance with the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW, 2009) and the CNPS Botanical Survey Guidelines (CNPS, 2001). The survey was intended to determine the presence of listed and special status plant species within the Proposed Project survey area. The plant nomenclature used follows *The Jepson Manual: Higher Plants of California* (Hickman, 1993) or more recently published taxonomic revisions of genera.

Prior to the field survey, records from the CNDDB (2012) and the CNPS Inventory of Rare and Endangered Plants (CNPS, 2012) were reviewed for potential occurrence of sensitive species or habitats within the USGS map quadrangles in which the Proposed Project occurs. In addition, plants identified by the MSHCP as NEPS or CAPS were included in the assessment. A list of the CNDDB, CNPS, NEPS, and CAPS rare plants occurring within the vicinity of the Proposed Project is included as Appendix B.

Field aerial photograph maps at a scale of 1:2400 (1 inch = 200 feet) were created for the entire survey area prior to field visits for the purpose of vegetation mapping and recording the locations of special status species. Mapped vegetation polygons, in conjunction with information on soils, topography, and land uses, were used to define plant habitats and identify focal plant survey areas, as discussed below.

The plant survey was conducted over the course of several months to cover the various blooming seasons of all potentially occurring rare plant species. Areas with potential habitat for special status plant species (i.e., mesic sites, rocky outcrops, clay or alkaline soils, etc.) were surveyed on foot. All plant habitats and micro-habitats in the survey area were represented. Areas with less potential to support rare plants (e.g., highly disturbed areas such as agriculture fields and recently disked sites) were surveyed using binoculars. Focused surveys for rare plants were floristic in nature, such that plant species were identified to the subspecies level. Although not necessary to meet MSHCP requirements, populations of CNPS listed species were identified throughout the Proposed and Alternative Project survey areas.

Special status plant species locations were documented as either points or polygons, depending on stand size, using GPS technology or by plotting on the aerial photograph maps. Locations were uploaded or digitized into TRC's GIS. Photographs were taken of representative survey areas, special status plant species, and their habitats.

5.3.4 Special Status Animal Species

The following species and species groups constitute special status taxa of various levels, from "covered" under the MSHCP to federally endangered. Some are associated with official survey protocols from the CDFW or the USFWS.

5.3.4.1 Fairy Shrimp

The federally endangered Riverside fairy shrimp (*Streptocephalus woottoni*) and federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) were not surveyed for during the 2012 season due to limited precipitation. However, as of this writing, a protocol survey for these two federally listed species has been partially completed for the 2012-13 rainy season by Cardno TEC under contract to TRC. In conjunction with this work, a refined map of potential habitat has been developed (see Figure 5, Potential Fairy Shrimp Habitat). Cardno TEC will continue to conduct bi-weekly surveys of the SCE Valley South Proposed Project survey area for the remainder of the 2013 wet season. Additionally, one dry season sampling event will occur following the conclusion of the 2012-2013 wet season. If a federally listed fairy shrimp species is encountered at any time during surveys, TRC will be contacted immediately.

5.3.4.2 Quino Checkerspot

No survey was conducted for this federally endangered butterfly in 2012 due to the timing of field activities and relatively dry conditions in spring. However, potential habitat for this species was identified in the course of vegetation mapping (see Figure 6, Potential Quino Checkerspot Habitat Map). Potential habitat for this species includes areas of relatively low and open grass or

shrub cover with at least partial cover by native herbs, including one or more larval host species. A protocol survey is planned for spring of 2013.

5.3.4.3 Amphibians and Reptiles

Surveys for special status amphibians and reptiles were conducted by sub-contractor Natural Resource Assessment Inc. (NRA), of Riverside. Detailed results of this survey are presented in a final report by NRA dated September 2012 (Appendix C). NRA biologists initially reviewed available information on the known special status species in the area, including CNDDB and information provided by the MSHCP. A subsequent field evaluation of soils, vegetation, topography, and hydrology was conducted to assess the best habitat locations for special status amphibian and reptile species. This habitat assessment resulted in the identification of 14 locales containing suitable habitat within the Proposed Project survey area. The limits of the areas surveyed varied among the locales, depending on the extent of potential habitat.

Surveys were conducted on foot for amphibian and reptile species between May 30 and June 13, 2012. Amphibian survey work included night searches and vocal identification as well as visual surveys during the daylight hours. Reptile survey work was conducted throughout the daylight hours from dawn to dusk. Survey effort focused on suitable habitats such as undisturbed or undeveloped areas, habitats with scrub and rock cover, including areas suitable for hibernation.

5.3.4.4 Nesting Raptors

A survey was conducted for nesting raptors within one half mile of the proposed alignments on three days during the spring and early summer of 2012 by sub-contractor Bloom Biological Inc. (BBI) of Santa Ana. Detailed results of this survey are presented in a final report by BBI dated July 2012 (Appendix D).

The survey was conducted by slowly driving on public roads in the Proposed Project survey area, with some area visitation on foot where road access would not allow sufficient examination of wooded or hillside areas. All large nests, both from raptors and corvids, were documented during the survey. Documentation consisted of collecting waypoints with a handheld GPS unit and associated notes about the nest observations that were consistent with the requirements of BBI's resource database. Data collected included species, substrate, number of eggs or young, nest height and additional notes. Some nest coordinates were projected due to access issues with private properties.

5.3.4.5 Burrowing Owl

TRC conducted a survey following the MSHCP Burrowing Owl Survey Instructions dated March 29, 2006, with a slight modification to the timing of the survey visits based on the most recent CDFW burrowing owl survey methodology (CDFW, 2012). Survey visits were conducted during the periods of highest detection probability, between morning civil twilight and 10:00 AM or two hours before sunset until evening civil twilight, according to the current understanding of burrowing owl biology incorporated in the survey methodology (CDFW, 2012).

As outlined in Sections 2.1 and 2.2 of the MSHCP survey instructions, the protocol consists of three steps: habitat assessment, burrow survey, and owl survey. The first step was conducted in conjunction with general vegetation mapping within the Proposed Project survey area in April of 2012. Vegetation map polygons were annotated with respect to presence of suitable burrowing owl habitat features, such as low, open vegetation cover, micro-topography (e.g., mounds, embankments), and general presence mammal burrows of suitable size, irrespective of basic vegetation type (e.g., grassland, coastal sage scrub).

The second step consisted initially of detailed mapping of potentially suitable burrows, suitable man-made structures that could be utilized by burrowing owls, and other habitat features with the aid of a hand-held Trimble sub-meter accuracy GPS unit or by plotting on aerial photographs. Based on the distribution of vegetation, burrows, and on logistic considerations, the Proposed and Alternative Project survey areas were divided into five survey areas. Concurrent with or subsequent to the burrow survey was the first of the requisite four survey visits for owls during the burrowing owl breeding season, between 1 March and 31 August. Visits occurred during weather conditions conducive to observing owls outside their burrows and detecting burrowing owl signs, avoiding rain, high winds (greater than 20 miles per hour), dense fog, or temperatures over 90 degrees Fahrenheit. All suitable habitat within the Proposed Project survey area was systematically walked in a pattern sufficient to allow 100 percent visual coverage of the ground surface for detection of burrows and burrowing owl sign. Additionally, in accordance with the survey protocol, all areas from 250 to 500 feet (150 meters) from the project alignments were searched either by walking or by binoculars if Right of Entry was not available.

All observations of burrowing owl, occupied burrows, and burrows with owl sign were recorded using GPS and mapped in GIS. Results of the survey were submitted to SCE in a report dated September 6, 2012, which is included herein as Appendix E.

5.3.5 Special Status Riparian Bird Species

Protocol surveys were conducted in riparian areas for the least Bell's vireo (vireo) and southwestern willow flycatcher (*Empidonax traillii extimus*) (flycatcher) by sub-contractor BBI. Surveys were directed to all streamside vegetation with woody components, from riparian scrub to forest (see section 6.2.2). The standard USFWS (2001) breeding-season protocols for vireo and flycatcher (Sogge et al., 2010) were followed.

Per USFWS protocol, potential vireo habitat within the Proposed and Alternative Project survey areas was visited eight times during the official survey season (April 10 to July 31) with at least ten days between survey visits. The survey was conducted during the morning hours prior to 1100 hours and when the temperature exceeded 50 degrees Fahrenheit (10 degrees Celsius).

Five flycatcher survey visits were conducted in appropriate habitat according to the USFWS protocol: once during Period 1 (May 15 to May 31), twice during Period 2 (June 1 to June 24), and twice during Period 3 (June 25 to July 17). Survey visits were conducted at least five days apart and were conducted during morning hours (prior to 1030) and when the temperature exceeded 50 degrees Fahrenheit (10 degrees Celsius). If a singing flycatcher was not heard after

several minutes, recorded flycatcher vocalizations were played for approximately 30 seconds in an attempt to induce response by any unseen birds.

The resulting report from both surveys is included herein as Appendix F.

5.3.6 California Gnatcatcher

A USFWS breeding-season protocol survey for gnatcatchers was conducted by sub-contractor BBI. The protocol for entities not enrolled in the state NCCP program requires a minimum of six visits within the period between March 15 and June 30, which defines the most active part of the breeding season. The standard non-breeding season protocol requires a minimum of nine surveys between July 1 and March 14. BBI conducted five breeding-season survey visits between May 8 and June 23 and two non-breeding season surveys between July 2 and July 13, according to the current protocol for split-season surveys.

Surveys consisted of meandering transects by foot in and adjacent to all coastal sage scrub vegetation within 200-500 feet of the Proposed and Alternative alignments. California Gnatcatcher vocalizations were played periodically on an iBird Pro© within suitable habitat (coastal sage scrub vegetation) with the intent of eliciting responses from silent individuals that might not otherwise be detected. Once a gnatcatcher was detected, playing of the recorded calls ceased in order to avoid further harassment.

The resulting report from this survey is included herein as Appendix G.

5.3.7 Small Mammals

A trapping survey for special status small mammals was conducted by sub-contractor NRA, of Riverside. NRA biologists initially reviewed available information on the known special status species in the area, including CNDDB, information provided by the MSHCP, and previous trapping surveys from similar areas. A subsequent field evaluation of soils, vegetation, topography, and search for diagnostic small mammal sign was conducted to identify the best areas for trapping survey. This habitat assessment resulted in the selection of 16 focal survey areas distributed throughout the Proposed and Alternative Project survey areas.

The official trapping protocol established for the Stephen's kangaroo rat was used for all special status small mammal trapping. This requires at least five sequential nights of trapping, conducted when the species is active above ground at night, preferably during a new moon phase. One trapping session was conducted from May 29 through June 3, 2012 and one session from June 6 through June 11, 2012 within the Proposed and Alternative Project survey areas.

Trap arrays of varying lengths and numbers of traps were situated so as to represent the various topographic features, ranging from flat to moderately sloped, and to concentrate on areas with sandy soils and rodent sign. Twelve-inch Sherman traps were used. Traps were baited with birdseed, set at dusk each night, inspected once during the night and at dawn, and removed daily. All animals were identified and released at the point of capture. Sex and age were determined for the Stephen's kangaroo rat, Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), and San Diego desert woodrat (*Neotoma lepida*).

The resulting report from this survey is included herein as Appendix H.

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6.0 RESULTS

6.1 LITERATURE REVIEW

6.1.1 Special Status Species

Special status species were identified as having a potential to occur in the Proposed and Alternative Project survey areas based on the database searches and other known occurrences of species in the area. CNDDB maps within three miles of the Proposed Project are provided for flora as Figure 7, CNDDB Special Status Flora Species and for fauna as Figures 8 and 9, CNDDB birds and reptiles, and invertebrates and mammals, respectively. Lists of potential special status plant and wildlife species are also provided as tables in Appendices I and J of this report, respectively.

6.1.2 Critical Habitat

The Proposed and Alternative Project survey areas intersect or occur near areas of designated USFWS critical habitat for four federally listed species: spreading Navarretia (*Navarretia fossalis*), Munz's onion (*Allium munzii*), Quino checkerspot, and California gnatcatcher. These areas are depicted in Figure 10, USFWS Critical Habitat Map.

6.1.3 Drainages and Other Water Features

Potential drainages identified from the review of aerial photographs and USGS maps were subject to wetlands / jurisdictional waters delineation. See section 6.2.7.

6.1.4 Soils

Soils reflect weathering and deposition of geological parent material and biological processes that contribute organic material. Soil types are of greatest relevance to the types of vegetation that grow under specialized conditions with respect to such factors as moisture content, particle size, and chemistry. Specific soils are also key to the occurrence of several special status plant species. Soil physical characteristics are also critical to the occurrence of certain small fossorial (burrowing) animal species, some of which are of special status.

Soils within the natural portions of the Proposed and Alternative Project survey areas are compositionally suitable to potentially support NEPS and CAPS. The survey areas support 85 soil types, according to the NRCS Soil Survey: Western Riverside Area California (2012). The soil types present within the Proposed and Alternative Project survey areas are identified in Appendix K, Soil Types. The suitability of these soils to support the NEPS and CAPS is discussed below. A generalized map depicting the location of clay and saline / alkaline soils is provided as Figure 11, Soils Map.

6.1.4.1 Clay Soils

The following NEPS and CAPS are generally associated with clay soils: Munz's onion, many-stemmed dudleya, California orcutt grass, Parish's brittlescale, thread-leaved brodiaea, and

round-leaved filaree. The Auld clay, Bosanko clay, Porterville clay, and Willows clay soil series are present within the Proposed Project survey area.

6.1.4.2 Sandy, Rocky, Gravelly, or Loamy Soils

The following NEPS and CAPS are generally associated with sandy, rocky, gravelly or loamy soils: Brand's phacelia, Munz's mariposa lily, San Diego, San Miguel savory, slender-horned spine flower, heart-leaved pitcher sage, and Nevin's barberry. Sandy, gravelly, or loamy soil types are present throughout the Proposed Project survey area.

6.1.4.3 Saline or Alkaline Soils

The following NEPS and CAPS plant species are generally associated with saline or alkaline soils: San Diego ambrosia, spreading navarretia, California orcutt grass, Wright's trichocoronis, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, smooth tarplant, Coulter's goldfields, and little mousetail. The Chino silt loam, Domino loam, Exeter sandy loam, Grangeville fine sandy loam, Porterville clay, and Willows silty clay soil series all contain saline or alkaline components within the Proposed Project survey area.

6.1.4.4 Wetlands Soils

The NRCS has mapped 27 soil series as occurring within the Proposed and Alternative Project survey areas. Of those, the NRCS has identified the Domino and Yokohl soil series as potentially hydric soil series (NRCS, 2011). These are described in more detail below.

Two soil types within the Domino soil series have been categorized by the NRCS as being potentially hydric. Specifically the NRCS identifies Domino silt loam, saline-alkali (Dv) and Domino silt loam, strongly saline-alkali (Dw) as being potentially hydric. The soils of the Domino Series are very deep, poorly to very poorly drained alkali soils formed in alluvium from mixed rock sources. Domino soils occur in basins and have slope from 0 to 2 percent. The soils of the Domino Series are used for growing rice, sugar beets, and safflower. Original vegetation was saline-alkali tolerant plants including many rare plants in the western Riverside County region.

One soil type within the Yokohl soil series has been categorized by the NRCS as being potentially hydric. Specifically the NRCS identifies Yokohl loam, 2 to 8 percent slopes (YbC) as being potentially hydric. The soils of the Yokohl Series are shallow (10-20 inches), well drained non-saline soils formed in alluvium from igneous sources. Yokohl soils occur in depressions and have a slope of 2 to 8 percent. The soils of the Yokohl series are not generally used for agriculture.

The above three soil types are identified as potentially hydric in the local hydric soils NRCS list for the Western Riverside Area. It is important to note that under the Arid West Supplement, the presence of mapped hydric soils is no longer dispositive for the presence of hydric soils. Rather, the presence of hydric soils must now be confirmed in the field.

6.2 FIELD SURVEYS

This section summarizes the results from a series of field surveys for various biological resources conducted within or adjacent to the Proposed and Alternative Project survey areas in 2012 by TRC and its sub-contractors. Full reports from these survey efforts are presented in this document as Appendices A through H.

6.2.1 Biotic Inventory

Many species of naturally occurring plants and animals were documented within the Proposed and Alternative Project survey areas and immediate surroundings through focused and incidental inventory. This documentation of basic biodiversity resulted in the detection of 298 species of vascular plants and 161 animal species. Lists of these species are provided in Appendices L and M.

6.2.2 Vegetation and Other Land Cover

The Valley South 115 kV Subtransmission Line Project occurs within the South Coast sub-region of the Southwestern California region of the California Floristic Province. The South Coast sub-region extends along the Pacific Coast from Point Conception southward into Mexico.

Seventeen vegetation communities, sub-types, and other land cover types were documented and mapped within the Proposed and Alternative Project survey areas (500–foot buffer). These are identified and acreages given in Table 1, Vegetation Types Mapped within 250 Feet of the Proposed Project and Alternative Project, and their distributions are depicted in Figure 12, Vegetation and Other Land Cover Types. Table 1 is organized in modular fashion to provide separate vegetation acreages for the shared northern (north of Scott Road), southern, and western sections, as the eventual project will include only one of the two latter routes. Information is presented in this way to facilitate comparison of alternatives of the eventual subtransmission build-out.

Vegetation is classified and mapped according to the system of Holland (1986), as modified by Oberbauer et al. (2008), where appropriate. Table 1 further provides corresponding vegetation types according to Sawyer at al. (2008) for broader comparisons.

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Table 1
Vegetation Types Mapped Within 250 Feet of the Proposed and Alternative 115 kV Subtransmission Line (500 Foot-wide Corridor)

Total Acres (500-foot Survey Buffer for Proposed and Alternative Projects)	Shared Northern Section and Staging Yards (Proposed and Alternative Projects)	Proposed Project Southern Section	Alternative Project Western Section	Standard Classification Schemes	
Acres				Holland 1986	Sawyer et al. 2009
5.1	0.02	1.1	4	Southern Cottonwood - Willow Riparian Forest (61330)	*Populus fremontii* forest alliance
1.6	0.00	0.00	1.6	Central Coast Arroyo Willow Riparian Forest (61230)	*Salix lasiolepis* shrubland alliance
0.9	0.2	0.00	0.7	Southern Willow Scrub (63320)	*Baccharis salicifolia* shrubland alliance
4.0	2.9	1.2		Mulefat Scrub (63310)	*Baccharis salicifolia* shrubland alliance
8.5	0.00	0.00	8.5	Diegan Coastal Sage Scrub: Inland Form (32520)	*Eriogonum fasciculatum* - *Salvia apiana* shrubland alliance
74.2	29.5	0.6	44.1	Coastal Sage Scrub (32500)	*Artemisia californica* - *Eriogonum fasciculatum* shrubland alliance and *Artemisia californica* - *Eriogonum fasciculatum* shrubland alliance
3.5	0.00	0.00	3.5	Chamise Chaparral (37200)	*Adenostoma fasciculatum* shrubland alliance
5.3	0.00	0.00	5.3	Coastal Sage - Chaparral Scrub (37G00)	*Keckiella antirrhinoides* shrubland alliance
248.8	115.6	69	64.2	Ruderal / Disturbed Habitat (11300)(1)	*Bromus* - *Brachypodium distachyon* semi-natural stands
88.1	31.9	25.9	30.4	Non-native Grassland (42200)	*Bromus* - *Brachypodium distachyon* semi-natural stands and *Avena* semi-natural herbaceous stands

Table 1 Continued

Vegetation Types Mapped Within 250 Feet of the Proposed and Alternative 115 kV Subtransmission Line (500 Foot-wide Corridor)

Total Acres (500-foot Survey for Proposed and Alternative Projects)	Shared Northern Section and Staging Yards (Proposed and Alternative Projects)	Proposed Project Southern Section	Alternative Project Western Section	Standard Classification Schemes	
Acres				Holland 1986	Sawyer et al. 2009
309.1	105.5	72	131.8	Urban / Developed (12000)[1]	No counterpart
24.4	16.4	3.9	4	Eucalyptus Woodland (79100)[1]	*Eucalyptus* semi-natural woodland stands
3.3	0.00	3.2	0.1	Valley Freshwater Marsh (52410)	*Typha* / *Schoenoplectus* herbaceous alliances
1.3	0.00	0.00	1.3	San Diego Mesa Claypan Vernal Pool (44322)[1]	vernal pools, seeps, swales, and plains[2]
332	228.4	38.3	65.3	Agriculture (18000)[1]	No counterpart
4.1	4.1	0.00	0.00	Disturbed Wetland (11200)[1]	*Bolboschoenus maritimus* herbaceous alliance
3.8	3.8	0.00	0.00	Fresh water (64140)[1]	No counterpart
Total: 1118.2	**Total: 538.3**	**Total: 215.1**	**Total: 364.8**		

[1] Vegetation types not addressed in Holland 1986, so classified according to Oberbauer et al. 2008.

[2] Due to species composition, not resolvable to vegetation alliance level under this system.

The vegetation types in an area reflect conditions of temperature, moisture, soil, topography, and disturbance. Vegetation types are strongly synonymous with habitat types for plant and animal species. In turn, the diversity and identity of vegetation types in an area is reflected in the diversity and composition of the biota. Vegetation types themselves, as predictable associations of species, represent a higher order of biodiversity in an area.

The narrative vegetation descriptions below are arranged in the order of increasing structure and woody composition.

6.2.2.1 Upland Herbaceous Vegetation

Non-woody, seasonally dry upland vegetation accounts for approximately 60 percent of the Proposed and Alternative Project survey areas. Dry herbaceous types occur mostly on level or gently sloping terrain, although they provide significant cover within open shrub vegetation on gradual to steep slopes as well. This general vegetation structural form consists of several defined types that vary in their degree of native composition and direct human origin. Upland herbaceous vegetation includes ruderal, non-native grasslands, and agricultural habitats.

Ruderal (Holland-Oberbauer Code 11300)

Ruderal is defined as consisting predominantly of non-native, short-lived annual plants adapted to colonizing disturbed areas. Ruderal areas typically have been disturbed to the degree where they no longer bear any resemblance to the original vegetation occurring in these places. Some native "weed" species and few small, fast-growing woody species may occur as part of this association. Ruderal vegetation establishes naturally on areas that have been disturbed by human-related activities such as tilling, grazing/trampling, scraping, or earth-moving. It occupies waste areas, often on roadsides with heavily compacted soils with little available oxygen. Ruderal areas are typically maintained in a disturbed condition on an infrequent basis, therefore allowing the establishment and proliferation of rank vegetation cover.

Approximately 240 acres of ruderal vegetation is distributed widely throughout the Proposed and Alternative Project survey areas, occurring on field edges, road margins, untended agricultural fields, and other areas previously mechanically disturbed, such as abandoned graded construction pads. Typical species vary depending on the location and level of disturbance, but are often dominated by herbaceous annuals and grasses. Species can include mustards (*Brassica* sp.), radish (*Raphanus sativus*), wild oat (*Avena* spp.), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), Australian saltbush (*Atriplex semibaccata*), tocalote (*Centaurea melitensis*), fennel (*Foeniculum vulgare*), telegraph weed (*Heterotheca grandiflora*), castor bean (*Ricinus communis*), pineapple-weed (*Chamomilla suaveloens*), sowthistle (*Sonchus oleraceus*), horseweed (*Conyza canadensis*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), bristly ox-tongue (*Lactuca serriola*), tarweeds (*Deinandra* sp.), and goosefoot (*Chenopodium* spp.). Ornamental species may also colonize and proliferate in ruderal communities (Holland and Keil, 1995).

Non-Native Grassland (Holland-Oberbauer Code 42200)

The distinction between ruderal and non-native grassland vegetation is based on a subjective threshold of proportion of grasses versus non-grass species. These types apparently share a common origin in disturbance combined with invasion by non-natives. Non-native grassland may be more typically associated with livestock grazing and ruderal may correspond more with former soil disturbance. The proportions of grass and forb vary, but predominance of dense grasses with a small proportion of forbs and few sparse or open areas defines non-native grassland. This vegetation is self-perpetuating.

Approximately 97 acres of non-native grassland occurs widely throughout the Proposed and Alternative Project survey areas on valley bottoms and gradual slopes. It often intergrades with and resembles dry grain agriculture and in places may represent fallow agricultural fields. It is also widespread in the openings within sparse, formerly disturbed coastal sage scrub, although it was not mapped separately as a component of scrub vegetation. Grassland is typically dominated by a mixture of non-native species such as wild oat and various bromes (*Bromus mollis, B. tectorum*, and *B. rubens*).

Grassland likely originally occupied much of the valley bottoms and gradual slopes in the inter-mountain lowlands of western Riverside County. Invasion of non-native herbaceous weedy species has been widespread, largely in response to ground disturbance, but areas only moderately disturbed and retaining relatively natural soil conditions often support a significant component of native grass and forb species. One area of non-native grassland, located southeast of the Menifee and Keller Road intersection, has more open characteristics and provides potential habitat for rare plant species and Quino checkerspot. This area consists largely of non-native species and is dominated by wild oat, with lesser amounts of various bromes, dot-seed plantain (*Plantago erecta)* and tarweeds.

Agriculture (Holland-Oberbauer Code 18000)

The predominant form of agriculture in the inter-mountain lowland area of western Riverside County is dry grain cultivation, particularly wheat. Actively tended agricultural lands account for approximately 317 acres of the Proposed and Alternative Project survey areas. Agriculture is confined to valley bottoms and low-gradient slopes and is characterized by monocultures of crops requiring cultivation (ground disturbance) and subject to regular, mechanical harvest. As such, these types are not self-perpetuating, actually representing a form of human development, and thus provide little habitat value for native plants and animals. However, the presence of vegetation cover, seasonal food source, and lack of human structures and roads provides some resources, including dispersal corridors, for adaptable animal species. Some disturbance-adapted, but geographically restricted (i.e., special status) native plant species also occur in agricultural margins.

6.2.2.2 Wetland Herbaceous Vegetation

Drainages and basins in the Proposed and Alternative Project survey areas are natural collecting places for water, either ephemerally or perennially. Water sources are either natural (e.g.,

rainfall, springs) or anthropogenic (e.g., irrigation, runoff). Localized surface or subsurface water of any persistence results in abrupt vegetation changes in generally arid landscapes such as western Riverside County. Wetland vegetation often provides a disproportionate amount of cover and food resources in a landscape. Wetland herbaceous vegetation includes valley freshwater marsh, disturbed freshwater seep, and disturbed wetland habitats.

Valley Freshwater Marsh (Holland-Oberbauer Code 52410)

A total of 3.3 acres of valley freshwater marsh habitat are present within the Proposed Project survey area. Valley freshwater marsh is dominated by perennial, emergent monocots and occurs in areas of persistent, but not necessarily perennial, surface water. The interplay between marsh and woody riparian growth is complex, but generally marsh prevails in open wet areas with persistent, deep surface inundation and lacking significant flow. The prolonged saturation typically results in the accumulation of deep, peaty soils (Holland, 1986). Marsh establishment also occurs shortly after disturbance in wet areas. Marsh frequently occurs on the open peripheries of or in openings within woody riparian stands. The structural dominants in lowland inter-mountain western Riverside County marshes are bulrush (*Scirpus* spp.) and cattail (*Typha* spp.), which often form dense stands up to 3 meters tall. Many smaller native and non-native species such as spike rush (*Eleocharis* spp.), rush (*Juncus* spp.), sedge (*Cyperus* spp.), curly dock (*Rumex crispus*), salt grass (*Distichlis spicata*), and rabbit foot grass (*Polypogon monspeliensis*) also occur. These marshes also often include a few small, scattered individuals of woody species such as salt cedar (*Tamarix* spp.), mule fat (*Baccharis salicifolia*), and willow (*Salix* spp.).

Valley freshwater marsh habitat is scattered throughout the Proposed Project survey area along natural and channelized drainages and in natural and artificial storm water retention basins, where this vegetation type establishes shortly after disturbance. A large area of marsh occurs on the natural drainage basin near the southern end of Proposed Project, which follows Leon Road. Only a very small area of marsh occurs within the Alternative Project survey area.

San Diego Mesa Claypan Vernal Pool (Holland-Oberbauer Code 44322)

A total of 1.3 acres of disturbed ephemeral basin hydrology and vegetation occur within the Alternative Project survey area. Although no true vernal pools occur within the survey area, one localized basin provides wet conditions of sufficient seasonal duration to support prolonged growth of hydric and mesic herbaceous species, none of which are restricted to vernal pools. This disturbed vegetation type includes low wetland plant species such as common knotweed (*Polygonum aviculare* ssp. *depressum*), rush, spike rush, sedge, curly dock, salt grass, rabbit foot grass, and brass buttons (*Cotula coronopifolia*). This basin, which occurs immediately northeast of the intersection of Menifee and Scott Roads, also supports components of non-native grasses, which become more prevalent seasonally, as the soil dries.

Disturbed Wetland (Holland-Oberbauer Code 11200)

A total of 4.1 acres of disturbed wetland habitat are present within the Proposed Project survey area. Disturbed wetlands are characterized by emergent monocots and forbs that are subject to a wide array of anthropogenic disturbance. Salt Creek, located north of and paralleled by Domenigoni Parkway, is a natural drainage that has been widely channelized for flood control.

It supports low, disturbed wetland vegetation that experiences seasonal drying and livestock grazing. Dominant vegetation included brass buttons, various flat sedges (*Cyperus* sp.), cattails, bulrush, salt grass, and alkali heliotrope (*Heliotropium curassavicum*).

6.2.2.3 Native Shrublands

Associations of shrub-forming species are the dominant vegetation form throughout much of arid, lowland southern California. This woody or semi-woody form reflects adaptation to seasonal drought conditions and irregular disturbance through wildfire. Shrublands typically dominate on dry, often steep slopes of relatively poor, well-drained soils. Density and species composition vary with location and conditions, but most shrublands include an herbaceous component that ranges from sparse understory to extensive, floristically diverse associations in the shrub interstices.

Diegan Coastal Sage Scrub and Diegan Coastal Sage Scrub: Inland Form (Holland-Oberbauer Codes 32500, 32520)

Approximately 83 acres of Diegan coastal sage scrub, including Diegan Coastal Sage Scrub: Inland Form, habitats are present within the Proposed and Alternative Project survey areas. Diegan coastal sage scrub is an association of relatively low-stature, woody or semi-woody shrubs and subshrubs averaging less than two meters in height. Diegan Coastal Sage Scrub: Inland Form occurs farther from the coast and at somewhat higher elevations than the typical form, often intermixed with stands of chaparral vegetation. Although it shares the typical dominant shrub species with the coastal form of Diegan coastal sage scrub, the inland form also includes a higher proportion of taller woody species such as white sage (*Salvia apiana*) and bush penstemon (*Keckiella antirrhinoides*) resulting in a taller, more dense structure. These vegetation sub-types occur on lower elevation, more exposed, and highly drained slopes relative to other shrub types, therefore typically existing under the harshest conditions in the landscape. Component species have adapted to seasonal drought through a variety of means such as drought-deciduousness, reduced leaf surfaces and/or hard leaf cuticles that resist water loss, and large root masses. Many species contain aromatic compounds in their tissues to discourage herbivory. This vegetation is adapted to fire by such means as resistant basal tissues (i.e., crown-sprouting) and persistent seed bank.

Dominant shrub species of coastal sage scrub vary depending on local site factors (e.g., slope aspect, soil) and levels of disturbance. Most of the Diegan coastal sage scrub is uniformly dominated by buckwheat (*Eriogonum fasciculatum*). California sagebrush (*Artemisia californica*) occurs in varying proportions, but is rarely equal to buckwheat in dominance. Brittle bush (*Encelia farinosa*), which is an indicator of desert transition conditions, is very infrequent within the Proposed Project survey area, suggesting coastal affinities of the vegetation. Cacti such as cholla (*Cylindropuntia californica*) and prickly pear (*Opuntia littoralis*) occur in small proportion. This sage scrub vegetation is variably open, ranging from approximately 30 percent to 80 percent shrub cover and the average height is about one meter.

Coastal Sage – Chapparal Scrub (Holland-Oberbauer Code 37G00)

A total of 5.3 acres of coastal sage – chapparal scrub habitat is distributed as several disjunct patches along the Alternative Project. Coastal Sage – Chapparal Scrub is generally located within the transition area located between Diegan coastal sage scrub and chamise chaparral and is composed of species from both vegetation communities. Buckwheat is still the common element to all stands, but California sagebrush is relatively more prevalent and other species such as white sage, black sage (*Salvia mellifera*), bush penstemon, spiny red berry (*Rhamnus crocea*), skunk brush (*Rhus trilobata*), thick leaf yerba santa (*Eriodictyon crassifolium*), and deer weed (*Lotus scoparius*) occur in variably high proportions. Buckwheat is typically not a sole dominant in these stands. The structure of these stands is dense (60 percent or greater shrub cover) and tall (average greater than one meter). Stands are located within the southwestern portion of the Proposed Project survey area, surrounding Clinton Keith Road.

Chamise Chaparral (Holland-Oberbauer Code 37200)

A total of 3.5 acres of chamise chapparal habitat is present within the Alternative Project survey area. Chaparral differs from coastal sage scrub in being composed of species with taller stature that grow in higher density. These species are somewhat less tolerant of seasonal drought than typical coastal sage scrub species, generally occurring at higher elevations and/or on more sheltered slopes (e.g., north-facing) with relatively moist conditions. They nevertheless exhibit drought-tolerant features, such as reduced leaf area and hard cuticles, and are adapted to survive wildfire.

Two small stands of chaparral consisting soley of chamise (*Adenostema fasciculatum*) occur in the southwestern part of the Alternative Project survey area. Several nearby stands of the taller, more diverse sage scrub described above include species that also occur in chaparal.

6.2.2.4 Woody Riparian Vegetation

Watercourses or basins with persistent to perennial surface or subsurface water flow or water table naturally support localized growth of trees and shrubs dependent on such available water. Such trees are characteristically winter-deciduous. Marsh vegetation also occurs under these conditions, as discussed above. Riparian stands often provide marked contrast against surrounding xeric vegetation in arid southern California.

Tree-dominated riparian stands vary significantly in height and density, depending on local hydrology and disturbance history. The distinction between scrubs and forest is somewhat imprecise, with the term scrub representing relatively open stands, typically with smaller trees. Riparian forest categories are defined as containing trees over 6 meters in height. Occasional isolated riparian trees of tall stature were mapped as "forest" to reflect the vegetation structure they provide. Riparian forest within the Proposed and Alternative Project survey areas reaches a maximum height of approximately 13 meters. Most stands are natural, but some within developed areas have been actively restored or enhanced, presumably as mitigation for construction impacts elsewhere. Restoration sites also include peripheral areas of riparian scrub.

Central Coast Arroyo Willow Riparian Forest (Holland-Oberbauer Code 61230)

A total of 1.6 acres of central coast arroyo willow riparian forest are located within the Alternative Project survey area. Although species composition varies among forest stands within the survey area, the common element in all is the presence of one or more species of willow: arroyo (*Salix lasiolepis*), red (*S. laevigata*), black (*S. gooddingii*), and yellow (*S. lasiandra*). Willow-dominated riparian growth occurs in the southwesterrn portion of the survey area. Western sycamore (*Platanus racemosa*) occurs in some stands, but generally appears to have been planted as part of restoration efforts .

Southern Cottonwood – Willow Riparian Forest (Holland-Oberbauer Code 61330)

Several willow-dominated stands support varying proportions of Fremont cottonwood (*Populus fremontii*), the presence of which generally correlates with taller structure and apparently indicates greater stand maturity and longevity. A total of 5 acres of this vegetation occurs primarily within the southern portion of the Alternative Project survey area.

Mulefat Scrub (Holland-Oberbauer Code 63310)

A total of four acres of mulefat scrub occur as small, scattered locations throughout the Proposed Project survey area. Mulefat scrub is composed of moderate to tall (four meters or less) shrubs in disturbance-prone areas of washes and floodplains or alonglower order drainages with less persistent water flow. It is often closely mixed with marsh growth and often occurs on the relatively dry peripheries of riparian forest stands. Mulefat is typically dominant with minor components of seasonal herbaceous plants, various willow species, or other low-growing, native woody plants. Stands are inherently variable in structure, depending on the amount of inundation and scouring they are subject to.

Southern Willow Scrub (Holland-Oberbauer Code 63320)

A total of 0.9 acres of southern willow scrub are located within the Proposed and Alternative Project survey areas. Willow scrub is generally less than 6 meters in average height and tends to be relatively open and composed of smaller individual plants than forest or woodland, including certain species that do not naturally exceed this height. This vegetation rarely exceeds 4 meters in height and is often associated with former disturbance on watercourses or with lower order drainages with less persistent water flow. It is often closely mixed with marsh growth and often occurs on the relatively dry peripheries of riparian forest stands. This vegetation type is dominated by arroyo and/or red willow species, as well as lower-growing co-dominant species such as mulefat, mexican elderberry (*Sambucus mexicanus*), sandbar willow (*Salix exigua*), black willow, and non-native salt cedar. This vegetation also includes a high proportion of non-native herbaceous wetland plants.

6.2.2.5 Anthropogenic Vegetation and Other Land Cover Types

Direct human modification of the natural landscape ranges from ground disturbance and non-native plantings, to water flow modification and storage, to development of structures and roads.

Ornamental Vegetation (Holland-Oberbauer Code 12000)

About 30 acres of ornamental vegetation are located within the Proposed and Alternative Project survey areas, comprising a portion of the urban/developed category in Table 1. Ornamental vegetation vegetation includes intentionally planted and maintained non-native vegetation of a variety of structures and compositions. These comprise herbaceous to woody species requiring varying levels of active effort to maintain and include ornamental and shade plantings around residences, agricultural shelter belts, and tree stands originally planted as sources of wood. This vegetation provides some habitat structure for human commensal wildlife, particularly bird species adapted to or tolerant of human habitations. Eucalyptus trees (*Eucalyptus* spp.) were mapped separately because of their prevalence, relatively long history in the California landscape, and nesting habitat provided for birds of prey.

Eucalyptus (Holland-Oberbauer Code 79100)

Approximately 24 acres of mapped eucalyptus stands are located within the Proposed Project and Alternative survey areas. Areas mapped as eucalyptus consist of stands of trees that are entirely, or primarily, comprised of one or more species of eucalyptus, including silver dollar gum eucalyptus (*Eucalyptus polyanthemos*) and blue gum (*E. globulus*). Eucalyptus stands often provide nesting habitat for birds of prey.

Urban / Developed (Holland-Oberbauer Code 12000)

About 280 acres of disturbed/developed are located within the Proposed and Alternative Project survey areas. These areas consist of residential, commercial, infrastructure, and roadway development. These areas may include some planted, non-native vegetation.

Open Water (Holland-Oberbauer Code 64140)

A total of 3.8 acres of open water are located within the northern section of the Proposed Project survey area. Open water is included in the anthropogenic communities because it is only associated with human development in the form of treatment ponds, agricultural settling ponds, or flood control facilities and are therefore maintained in an open state. Open water habitat consists of large areas with standing water that are primarily unvegetated, but may support a few water-loving species such as pondweed (*Potamogeton* sp.) and filamentous algae. In areas with natural banks, the perimeter of open water habitat may be vegetated with wetland or riparian plant species.

6.2.3 Special Status Vegetation Communities

Some of the vegetation communities occurring within the Proposed and Alternative Project survey areas are considered sensitive or have other special status by virtue of natural rarity, geographic restriction combined with historic decline from human development, and/or association with watercourses. Many of these vegetation communities provide or support specialized habitat conditions for sensitive plant or animal species. Special status vegetation communities associated with wetlands or navigable waters are regulated by the federal government under the CWA and under state of California Section 1600 regulations. The FESA

regulates vegetation communities through its recognition of the importance of habitat to listed plants and animals, including designation of specific geographic critical habitat areas. The State of California also protects certain vegetation as habitat for species listed under CESA. Significant impacts to sensitive vegetation are also addressed under CEQA. Federal, state, and local regulations converge in the conservation of several vegetation communities, some of which are geographically widespread, under the NCCP process.

Coastal sage scrubis considered a sensitive habitat type by both federal and state resource agencies, local jurisdictions, and conservation organizations throughout southern California. Losses of up to 85 percent have been estimated for coastal sage scrub in southern California, largely attributable to residential development and agricultural activities. The trend for continued losses has resulted in the selection of this community as the focus of the State of California's first habitat-based, multiple-species conservation plan under the NCCP program. Coastal sage scrub provides habitat for the coastal California gnatcatcher, a federally threatened species, as well as a variety of other animal and plant species that are candidates for federal listing, state species of special concern, or considered sensitive by local jurisdictions.

All riparian communities in southern California, including woody scrub types, are considered sensitive by federal and state resource agencies. Estimated historical losses of riparian habitat in southern California range as high as 95 to 97 percent. Habitat destruction and degradation has resulted from wetland conversion for agricultural purposes, urban development, and flood control projects. Riparian vegetation provides shelter, food, and breeding habitat for numerous plant and wildlife species.

Grasslands support a unique suite of plant and animal species, some of which have special conservation status. Although truly native grasslands no longer occur in California due to the historical, widespread invasion of non-native Mediterranean plant species, native value is measured on the proportion of native species remaining within the non-native matrix of exotic grasses and forbs. Perhaps owing to local disturbance history, some areas have resisted complete invasion by non-natives and retain relatively high proportions of native species elements and relatively open structure. Detailed vegetation mapping for the Proposed and Alternative Projects distinguished such areas as high potential habitat for certain special status species.

Table 1 and Figure 12 provide acreages and distributions of sensitive vegetation communities, respectively.

6.2.4 Special Status Plant Species

Forty-two special status plant species were identified from the literature review (refer to Figure 7) and other sources (e.g., local experts, presence of habitat conditions, the list of MSHCP covered plant species) as having the potential to occur within three miles of the Proposed Project survey area. Appendix I provides a list of these species, including their statuses and potentials to occur in the Proposed and Alternative Project survey areas.

Five special status plant species were documented within the survey areas during the 2012 survey and are discussed below. Only one is among the species recognized by the MSHCP as a CAPS. The other four are listed as special status by the CNPS.

6.2.4.1 Smooth Tarplant (*Centromadia pungens ssp. laevis*; CAPS, CNPS Rank 1B.1)

Smooth tarplant is recognized as a CAPS under the MSHCP. It is a moderately sized annual with prickly foliage that remains green well into the dry season with a typical blooming period from April to September. It occurs in a variety of habitats including alkali scrub, alkali playas, riparian woodland, watercourses, and grasslands with alkaline affinities. Smooth tarplant is found in southwestern California and northwestern Baja California, Mexico, specifically in San Bernardino, Riverside, and San Diego Counties (CNPS, 2012). The majority of the populations in western Riverside County are associated with alkali vernal plains.

Five populations of smooth tarplant were identified during the 2012 rare plant survey conducted within the Proposed and Alternative Project survey areas. Most are distributed along the shared northern section of the alignment and only one small stand occurs at the southeastern extreme of the Alternative Project (see Figure 13, Special Status Plant Species Locations).

6.2.4.2 Long-Spined Spineflower (*Chorizanthe polygonoides var. longispina*; CNPS Rank 1B.2)

Long-spined spine flower is associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland, openings in coastal sage scrub, and chaparral with a typical blooming period from April to July (Reiser, 2001). The majority of populations are associated with needlegrass (*Nassella* sp.) in clay soils. Long-spined spineflower occurs from about 300 to 4600 feet in elevation in southwestern California and northwestern Baja California, Mexico, from western Riverside County south, through San Diego County (CNDDB, 2012).

Long-spined spine flower was observed within Diegan coastal sage scrub and non-native grassland in shallow clay soil lenses. The largest population of long-spined spine flower was observed southeast of the Menifee and Keller Road intersection. Over 5,500 individuals were observed within the Proposed and Alternative Project survey areas. Specific locations of this species are provided in Figure 13.

6.2.4.3 Parry's Spineflower (*Chorizanthe parryi var. parryi*; CNPS Rank 1B.1)

Parry's spineflower occurs within the alluvial chaparral and scrub of the San Gabriel, San Bernardino and San Jacinto Mountains, at elevations of 300 to 4300 feet above mean sea level. It is a low-growing annual that blooms between April and June. This species is known from the flats and foothills of the San Gabriel, San Bernardino and San Jacinto Mountains within Los Angeles, San Bernardino and Riverside Counties of southern California (Reveal, 1989). Parry's spineflower is possibly extirpated from Los Angeles County.

Parry's spineflower was observed in openings within coastal sage scrub vegetation and was generally associated with granitic soils. Observations were often associated with biotic crusts located below granite outcroppings and indicative of undisturbed soils. Approximately 25

individuals were identified at various locations within the Alternative Project survey area surrounding the Clinton Keith and Menifee Roads alignments. Specific locations of this species are provided in Figure 13.

6.2.4.4 Clustered Tarweed (*Deinandra fasciculata [Hemizonia fasciculata]*; CNPS Rank 4)

Clustered tarweed is an herbaceous annual growing to 36 inches tall. The tarweed blooms prolifically between May and September, with small yellow disk flowers that are clustered at the ends of short, thin branches. The flowers are crowded at the tip of branches giving it a 'clustered' look. Often found in open or disturbed sites including grasslands, coastal scrubs, woodlands, vernal pools, and ruderal areas. Its flowering period is from April to November.

Clustered tarweed was observed in large numbers throughout the Proposed and Alternative Project survey areas. Observations were primarily located in non-native grassland habitat, but this species also occurred in mulefat scrub, Diegan coastal sage scrub, disturbed areas, southern willow scrub, and valley freshwater marsh habitats. Observations were frequently associated with seasonally mesic sites such as swales or minor changes in topography. While exact counts of the species were not collected, it is estimated that 10,000 to 20,000 individuals occur within the survey areas. Areas of higher density occurrence of this species are shown in Figure 13.

6.2.4.5 San Diego Tarweed (*Deinandra paniculata [Hemizonia paniculata]*; CNPS Rank 4)

San Diego tarweed is an herbaceous annual growing to 36 inches tall. It branches profusely above the middle of the plant, giving it a twiggy appearance. Single flowers are scattered throughout the plant. It is found in open or disturbed sites including grasslands, coastal scrubs, woodlands, vernal pools, and ruderal areas. Its flowering period is from April to November.

San Diego tarweed was observed in extremely large quantities throughout the Proposed and Alternative Project survey areas. Similar to clustered tarweed, observations of San Diego tarweed are primarily located in non-native grassland habitat, but it also occurs within mulefat scrub, Diegan coastal sage scrub, disturbed vegetation, southern willow scrub, and valley freshwater marsh habitats. San Diego tarweed was often observed in association with seasonally mesic sites, such as swales or minor changes in topography. While exact counts of the species were not collected, it is estimated the populations within the survey areas exceed 30,000 individuals. Areas of higher density occurrence of this species are shown in Figure 13.

6.2.5 Special Status Wildlife Species

The suite of vegetation types, soil types, topography, and hydrological conditions occurring within and surrounding the Proposed and Alternative Project survey areas, as well as the overall geography of the Valley South 115 kV Subtransmission Line Project provide habitat for an array of special status animal species, as defined in Section 5.2. Sixty-two special status species that have been documented in the project vicinity through literature search (refer to Figures 8 and 9), within the Proposed and Alternative Project survey areas through field survey, or are regarded as having a high probability of occurrence based on existing conditions, are identified and assessed in terms of habitat and likelihood of occurrence in Appendix J. Locations of special status

wildlife species documented in the course of field surveys are mapped in Figure 14, Amphibian and Reptile Distribution Map; Figure 15, Special Status Bird Species Map; and Figure 16, Special Status Mammal Species Map.

In addition to special status species, common and widespread raptor (bird of prey) species potentially nesting in or near the Proposed and Alternative Project survey areas are regarded as sensitive resources by CFG code. These species are addressed in Appendix J and some are depicted in Figure 15.

Forty of the 62 wildlife species addressed in Appendix J are discussed in greater detail in the following sections due to documented presence in the Proposed and Alternative Project survey areas, presence of designated critical habitat (USFWS), or high probability of occurrence.

6.2.5.1 Quino Checkerspot (*Euphydryas editha quino;* Federally Endangered, MSHCP Covered Species)

This spring-flying butterfly is restricted to few larval host plant species, the most significant of which in the coastal lowlands is dot seed plantain. Formerly widespread throughout the southern California counties, this subspecies has suffered dramatic population decline and loss of range since the mid-Twentieth Century due to native landscape conversion to agriculture and urbanization. Designated Critical Habitat (USFWS) for this species and CNDDB records surround the southern portions of the Proposed Project.

No survey was conducted for this species during the 2012 flight season (typically late February through the end of March). However, potential habitat, including the presence of dot seed plantain, was documented at several locations within the Proposed and Alternative Project survey areas (refer to Figure 4). A survey is planned for the spring 2013 season.

6.2.5.2 Riverside Fairy Shrimp (*Streptocephalus woottoni*; Federally Endangered, MSHCP Covered Species)

The Riverside Fairy Shrimp is a small freshwater crustacean typically found in deep, cool vernal pools that retain water through late spring. Its range extends from southwestern Riverside County to northwestern Baja California. Threats to the Riverside Fairy Shrimp include habitat loss and degradation due to urban and agricultural development, off-road vehicle use, livestock grazing and trampling, trash dumping, invasion from weedy non-native plants, drainage or watershed alterations, road development, military activities, fire and fire suppression activities, and drought.

CNDDB records for this species occur approximately two miles south of the Proposed Project survey area. Potentially suitable habitat in the form of scattered ephemeral basins occurs throughout the Proposed and Alternative Project survey areas. Over 60 small basins have been mapped (refer to Figure 5). A protocol survey was not conducted for this species in 2012, but is in progress during the 2012-2013 rainy season. None of the collected shrimp to date have been of listed species.

6.2.5.3 Vernal Pool Fairy Shrimp (*Branchinecta lynchi*; Federally Threatened, MSHCP Covered Species)

This species is restricted to native, ephemeral vernal pools throughout California and southern Oregon. Although widespread, it is associated with an extremely vulnerable, small-scale ecosystem that has experienced significant declines over the past 100 years due to habitat loss. Populations are highly disjunct.

CNDDB records for this species occur approximately two miles south of the Proposed Project survey area. Potentially suitable habitat in the form of scattered ephemeral basins occurs throughout the Proposed and Alternative Project survey areas. Over 60 small basins have been mapped (refer to Figure 5). A protocol survey was not conducted for this species in 2012, but is in progress during the 2012-2013 rainy season. None of the collected shrimp to date have been of listed species..

6.2.5.4 Coast Horned Lizard (*Phrynosoma coronatum*; California Species of Special Concern, MSHCP Covered Species)

The coast horned lizard inhabits open scrub and woodland types from the coastal mesas to higher foothills in southern California. It prefers open terrain, sandy substrates, and washes and is associated with native ant mounds as food sources (Stebbins, 1954). In occupies relatively undisturbed and unfragmented habitat areas and is apparently sensitive to disturbance, habitat alteration, commercial collecting, and predation by introduced animals.

Extensive suitable coastal sage scrub and low grassland habitat exists throughout the Proposed and Alternative Project survey areas. This species was documented in several locations (refer to Figure 14), with particular concentration along undisturbed sections of the Alternative Project.

6.2.5.5 Coastal Western Whiptail (*Aspidoscelis tigris multiscutatus*; MSHCP Covered Species)

This large, wary, swift lizard is active during the warmest months of year, when it can be seen foraging in vegetation openings, but typically near vegetation cover, which is quickly sought when disturbed. It occupies a range of open, dry vegetation types from ruderal road edges and agricultural margins to low, sparse grassland, to mature coastal sage scrub, chaparral, and big sagebrush scrub. Riparian margins are also occupied. The combination of minimal woody cover, low herbaceous vegetation, and open soil areas beyond the limits of dense urban development characterize this species' habitat. The coastal western whiptail is relatively broad in its food preferences, taking both small invertebrate and vertebrate prey (Jones and Lovich, 2008).

Several of this species were documented in grassland and coastal sage scrub within the Proposed and Alternative Project survey areas during 2012 surveys. Several were mapped and are shown in Figure 14.

6.2.5.6 Granite Night Lizard (*Xantusia henshawi henshawi*; MSHCP Covered Species)

This small, sedentary lizard is strictly nocturnal and always closely associated with large granitic or volcanic boulder outcrops with crevices and fissures for shelter (Lemm, 2006). Individuals forage beyond their shelters by night, occasionally moving beyond the immediate vicinities of their refugia. This species occurs from the coastal mesas and foothills to the mountains, generally irrespective of surrounding vegetation types, as long as large rocks are exposed on the surface (Jones and Lovich, 2008). Food consists almost entirely of arthropods.

This cryptic species was not detected during 2012 surveys, but is likely to occur in large boulder outcrops scattered throughout the Proposed and Alternative Project survey areas (see Figure 17, Major Boulder Outcrop Areas).

6.2.5.7 Granite Spiny Lizard (*Sceloporus orcuttii*; MSHCP Covered Species)

This large, wary lizard is active during the warm months and is restricted to large rock outcrops. It was found to be common and widespread in this habitat type within grassland and coastal sage scrub throughout the Proposed and Alternative Project survey areas in 2012 (refer to Figure 14). The distribution of this species was actually found to be better represented by the distribution of large boulder outcrops (refer to Figure 17), as some high-density locations were not specifically mapped.

6.2.5.8 Orange-Throated Whiptail (*Aspidoscelis hyperythra*; MSHCP Covered Species)

The orange-throated whiptail is uncommon to locally fairly common over much of its range in Orange, Riverside, and San Diego counties, especially in areas with summer morning fog. It inhabits low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats (Bostic, 1965).

This species was documented at one location along the Alternative Project alignment during 2012 surveys (refer to Figure 14). However, the species is likely more widespread in short grass, open scrub, and disturbed areas within the Proposed Project survey area as well.

6.2.5.9 Red Diamond Rattlesnake (*Crotalus ruber*; California Species of Special Concern, MSHCP Covered Species)

The red diamond rattlesnake is found primarily in coastal sage scrub, but also occurs in chaparral, woodland, grassland, and desert habitat areas from coastal San Diego County to the eastern slopes of the mountains. It prefers rocky areas, moderately opens vegetation, and requires rodent burrows, cracks in rocks or other surface cover objects for shelter (Klauber, 1972).

This species was documented at several locations within the Proposed Project survey area during 2012 surveys (refer to Figure 14).

6.2.5.10 San Diego Banded Gecko (*Coleonyx variegatus abbottii*; MSHCP Covered Species)

This cryptic, nocturnal species was not detected during 2012 surveys, but is likely to occur in large boulder outcrops scattered throughout the Proposed Project survey area (refer to Figure 17).

6.2.5.11 Silvery Legless Lizard (*Anniella pulchra pulchra*; California Species of Special Concern)

This cryptic, burrowing species occurs over a wide geographic range, from the coastline to high in the mountain foothills. Its occurrence is determined more by the presence of loose, sandy soil than by association with surrounding vegetation types (Jones and Lovich, 2008). Due to this habit, legless lizards are generally very hard to detect.

The silvery legless lizard was not detected during 2012 surveys, but has a moderate likelihood of occurrence in areas of loose, sandy soil within the Proposed and Alternative Project survey areas.

6.2.5.12 Two-Striped Garter Snake (*Thamnophis hammondii*; California Species of Special Concern)

The two-striped garter snake inhabits the coastal region of southern California from sea level to 7,000 feet elevation. This species requires watercourses with permanent or persistent fresh water, often with rocky beds and riparian growth as well (Jennings and Hayes, 1994).

This species was documented at several drainage crossings of the southern section of the Proposed Project survey area and along the Alternative Project survey area during 2012 surveys (refer to Figure 14).

6.2.5.13 Western Spadefoot (Spea hammondii; California Species of Special Concern, MSHCP Covered Species)

The western spadefoot toad occurs primarily in grassland habitats, although it can be found in valley-foothill riparian woodlands. Vernal pools or other non-flowing, seasonal waters are essential for breeding.

This species was documented in three wetland locations widespread throughout the Proposed and Alternative Project survey areas during 2012 surveys (refer to Figure 14).

6.2.5.14 American Bittern (*Botaurus lentiginosus*; MSHCP Covered Species)

This reclusive, marsh-dwelling bird is relatively uncommon in southern California. It was not detected in the Proposed Project survey area in 2012, but has a moderate to low probability of occurring in marshes near the southern end of the Proposed Project.

6.2.5.15 American Kestrel (*Falco sparverius*; sensitive raptor species)

North America's smallest raptor, the American kestrel is widespread and generally tolerant of relatively low-density human presence and moderate modifications to the landscape. It occurs

from the lower coastal slope to mountain meadows, occupying grassland, agricultural edges, rangeland, and other areas of open, low, non-woody vegetation for foraging. It is somewhat limited by the availability of relatively large tree cavities for nesting. Man-made structures with cavities are also used. Like all raptors, the kestrel's nest sites are sensitive to human disturbance.

This species was documented throughout the Proposed and Alternative Project survey areas during 2012 surveys, primarily as incidental observations from roadways through farmland and grassland. Adults observed with fledged juveniles indicated local breeding.

6.2.5.16 Bell's Sage Sparrow (*Amphispiza belli belli*; California Species of Special Concern, MSHCP Covered Species)

The Bell's sage sparrow is a shrub specialist, requiring large, undisturbed tracts of relatively low and open scrub vegetation on moderate to low gradient slopes. A population was documented in coastal sage scrub along the Alternative Project alignment during 2012 surveys (refer to Figure 15).

6.2.5.17 California Gnatcatcher (Polioptila californica; Federally threatened, California Species of Special Concern, MSHCP Covered Species)

This species is a variably common, obligate resident of arid coastal sage scrub vegetation from sea level to approximately 1,600 feet in eastern Orange and southwestern Riverside Counties. Like other species that rely on coastal sage scrub, the decline of the California gnatcatcher has been instigated by cumulative loss of this vegetation to urban and agricultural development (Atwood, 1992). The gnatcatcher was federally listed as endangered in 1993.

Designated Critical Habitat (USFWS) surrounds the southern portions of the Proposed Project survey area (refer to Figure 10). A protocol survey for this species conducted by BBI determined all significant patches of coastal sage scrub (refer to Figure 12) to be occupied by this species in 2012. Four to five persistent locations within the Proposed and Alternative Project survey areas were assumed to represent breeding pairs (refer to Figure 15). Reproduction was documented at two of these locations. The detailed survey report is included as Appendix G in this document.

6.2.5.18 California Horned Lark (*Eremophila alpestris actia*; California Species of Special Concern, MSHCP Covered Species)

The horned lark in California occupies flat, sparsely vegetated expanses consisting of either native vegetation types or acutely disturbed terrain. Old disturbed fields and scraped pads will support nesting by this species if disturbance is not overly frequent, yet is frequent enough to prevent rank growth of weeds or recovery of dense native vegetation.

This species was documented at the edges of active agricultural fields in the northern parts of the Proposed Project survey area and in disturbed, but inactive fields at the southern end in 2012.

6.2.5.19 Cooper's Hawk (*Accipiter cooperii*; California Species of Special Concern, MSHCP Covered Species)

Cooper's hawk is a fairly common resident in native woodlands and secluded groves of non-native trees in southern California. Its general distribution ranges from sea level to above 2,700 meters (0 to 9,000 feet). Dense stands of coast live oak (*Quercus agrifolia*), deciduous riparian forest, and Eucalyptus groves are occupied by this species (Zeiner, *et. Al.*, 1990). Foraging for favored bird prey can occur in any vegetation with tall structure.

Courtship behavior by this species was observed along Warm Springs Creek at the southern end of Alternative Project Alignment (refer to Figure 15), as well as scattered locations throughout the Proposed Project survey area in 2012.

6.2.5.20 Ferruginous Hawk (*Buteo regalis*; California Species of Special Concern; MSHCP Covered Species)

This large, soaring, predatory bird of open plains occurs in southern California only in winter. 2012 field activities occurred in spring and summer, precluding detection, but the species was detected in farmland near the northern outlying staging yards in early 2013. The ferruginous hawk is likely to occur in the extensive grasslands, agricultural areas, and open scrub vegetation in and surrounding the Proposed and Alternative Project survey areas. Three CNDDB records occur within three miles of the Proposed Project alignment (refer to Figure 8).

6.2.5.21 Golden Eagle (*Aquila chrysaetos*; California Species of Special Concern, California Protected, MSHCP Covered Species)

The golden eagle is the largest predatory bird in southern California and requires extensive wild or sparsely settled areas in which to nest and forage. Nests are typically built in highly secluded and inaccessible cliff areas, but this species will soar and forage widely over many types of terrain and vegetation.

A pair of these birds was observed adjacent to the northern parts of the Proposed Project survey area (refer to Figure 15) on one date in 2012, suggesting nesting in the local mountains. Foraging in the area can occur at any time of year.

6.2.5.22 Least Bell's Vireo (*Vireo bellii pusillus*; Federally Endangered, California Endangered, MSHCP Covered Species)

Least Bell's vireo is a migratory bird that spends its winters in Mexico and returns to its southern California breeding grounds from March to September. It breeds in dense, deciduous riparian stands with abundant undergrowth. The historic decline of this species is predominately due to a combination of habitat loss and brood parasitism by brown-headed cowbirds (*Molothrus ater*) (Kus, 2002).

A protocol survey for this species was conducted in 2012 by BBI and the resulting report is included in this document as Appendix F. A singing vireo was found in sparse willow woodland and freshwater marsh at the southern end of the Proposed Project survey area (refer to

Figure 15). Breeding was not confirmed. Suitable habitat for this species also occurs on Warm Springs Creek, which is crossed by the Alternative Project alignment.

6.2.5.23 Loggerhead Shrike (*Lanius ludovicianus*; California Species of Special Concern, MSHCP Covered Species)

The loggerhead shrike is a stocky songbird that functions as a small predator in lowland ecosystems, preying on a wide range of invertebrates and small vertebrates. It occupies open, generally flat terrain with low, sparse, typically herbaceous vegetation. The shrike is most typically associated with grassland. Although it requires large areas with very low human density, it is tolerant of human landscape modifications such as agriculture and grazing. In addition to open expanses, it readily makes use of fences for perching and for its peculiar habit of impaling prey, but requires a large, dense shrub or small tree for nesting.

Several pairs of this species were documented in open agricultural terrain in the northern parts of the Proposed Project survey area in 2012 (refer to Figure 15).

6.2.5.24 Merlin (*Falco columbarius*; MSHCP Covered Species)

A swift and stealthy predator of open plains, scrub hills, and shorelines, the Merlin occurs in southern California only in winter. 2012 field activities occurred in spring and summer, precluding detection, although it is likely to occur occasionally at practically any location within the Proposed and Alternative Project survey areas.

6.2.5.25 Mountain Plover (*Charadrius montanus*; California Species of Special Concern, MSHCP Covered Species)

This flocking shorebird is highly migratory, occupying open plains in California only during the winter months. 2012 field activities occurred in spring and summer, precluding detection of this bird, although it is moderately likely to occur in the extensive grasslands and fallow agricultural areas in and surrounding the Proposed and Alternative Project survey areas.

6.2.5.26 Northern Harrier (*Circus cyaneus*; California Species of Special Concern, MSHCP Covered Species)

Primarily a grassland species in southern California, this soaring predator requires large tracts of undisturbed land for foraging and nesting. Several were detected (refer to Figure 15) during early field activities in 2012, but none were found after April, suggesting this species may only occur in the Proposed and Alternative Project survey areas in winter.

6.2.5.27 Prairie Falcon (*Falco mexicanus*; California Species of Special Concern, MSHCP Covered Species)

The prairie falcon is a swift predatory bird of open plains and desert that occurs most commonly in southern California in winter. However, it breeds sparsely on the coastal slope, requiring a secluded and inaccessible cliff for nesting.

One bird was detected in the Proposed Project survey area in spring of 2012. Local breeding status is uncertain, although the Proposed and Alternative Project survey areas clearly lack suitable nesting habitat.

6.2.5.28 Red-Shouldered Hawk (*Buteo lineatus*; sensitive nest sites)

This stoutly built avian predator requires at least a moderately large tree stand as a territorial base, although foraging is often accomplished from a perch in open terrain. This hawk soars less than other related species; its relatively short wings and tail are adaptations to hunting amid tangles of branches and foliage. The red-shouldered hawk is tolerant of moderate anthropogenic landscape changes, readily occupying groves of Eucalyptus and other non-native trees, providing its well concealed nests are not disturbed by frequent or disruptive human activity.

At least one pair of this woodland predator was regularly detected just beyond the southern part of the Alternative Project survey area in 2012, likely nesting in a large Eucalyptus grove to the west of the alignment.

6.2.5.29 Red-Tailed Hawk (*Buteo jamaicensis*; sensitive nest sites)

Although the commonest and most widespread predatory bird in California, nests of the red-tailed hawk are sensitive to disturbance. A survey conducted in 2012 by BBI in 2012 documented 17 nesting pairs within one half mile of the Proposed Project alignment. The report from this survey is included herein as Appendix D. Nest locations documented during all phases of the 2012 field studies are summarized in Figure 15, Special Status Bird Species Map of this report.

6.2.5.30 Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*; California Species of Special Concern, MSHCP Covered Species)

This secretive seed eater exhibits a distinct preference for rocky or open hillsides of sparse, grassy coastal sage scrub or chaparral at relatively low elevations on the coastal slope of southern California. It also thrives in areas that have recently been burned and sometimes remains in these grassy, successional habitats for a number of years as dense scrub vegetation gradually recovers. Pairs nest on the ground in rock hollows or under clumps of grass or low brush (Pemberton, 1910). This species is tolerant of edge effects, small habitat patches, low shrub volume, and short-term habitat disturbance.

Rufous-crowned sparrows were found to occupy all significant patches of coastal sage scrub (refer to Figure 12) in the Proposed Project survey area in 2012. Specific locations were therefore not mapped.

6.2.5.31 Willow Flycatcher (*Empidonax traillii subspp.*; Federally Endangered, California Endangered, MSHCP Covered Species)

The willow flycatcher is a migratory species that breeds in North America and winters in South and Central America. The southwestern subspecies (*E. t. extimus*) is the federally endangered race that occupies a few lowland riparian zones in southern California. It occurs in the region

from early May to mid-September. The Southwestern willow flycatcher nests in large stands of relatively mature riparian forest with dense lower growth.

Threats to this sub-species include loss, fragmentation and modification of riparian habitat required for breeding, as well as brood parasitism by brown-headed cowbirds. Unlike some other declining riparian bird species, the willow flycatcher does not readily colonize former habitat that has recovered or has been restored.

A protocol survey for this species was conducted in 2012 by BBI. The resulting survey report is included in this document as Appendix F. The survey revealed a singing bird on Warm Springs Creek (refer to Figure 15) at the intersection of the Alternative Project on one date. This single occurrence suggests the bird was merely a transient migrant, perhaps of a different sub-species.

6.2.5.32 Tricolored Blackbird (*Agelaius tricolor*; California Species of Special Concern, MSHCP Covered Species)

The occurrence of this highly colonial species is difficult to predict from year to year because of its nomadic ecology, which involves sudden appearances in and disappearances from local areas of suitable marsh breeding habitat. Dense colonies of up to more than 1,000 pairs can establish in relatively little time, often overwhelming the nesting activities of other, more stable, locally breeding species. In addition to dense freshwater marsh habitat, tricolored blackbird colonies require nearby, often disturbed open terrain (including rangeland and agriculture) for group foraging on insects and seeds.

None of this species were detected within the Proposed and Alternative Project survey areas in 2012, but nesting in the freshwater marshes at the southern end of the Proposed Project in future years is moderately probable.

6.2.5.33 Western Burrowing Owl (*Athene cunicularia hypogea*; California Species of Special Concern, MSHCP Covered Species)

The burrowing owl is a crepuscular, ground-dwelling owl that relies on the burrowing activities of fossorial mammals for excavation of its shelters and nest sites. Typical habitat for this species includes open, dry grasslands, agricultural fields, sparse shrub lands, as well as developed areas with sufficient food sources. Common burrowing mammals that are associated with burrowing owls are ground squirrels, prairie dogs, and badgers.

TRC conducted a protocol survey for this species in 2012 and the resulting report is included herein as Appendix E. Suitable habitat conditions, including appropriate vegetation cover and presence of mammal burrows, are prevalent throughout the Proposed and Alternative Project survey areas. Figure 18, Burrowing Owl: Habitat Features and Owl Locations, shows potential habitat conditions and documented locations of owls. Three persistent locations of owls were documented in 2012, two of which were verified as nest sites. One incidental location was also mapped.

6.2.5.34 White-Tailed Kite (*Elanus leucurus*; California Fully Protected, MSHCP Covered Species)

The white-tailed kite is a perennial resident of lowland terrestrial habitats, particularly riparian woodland and oak or sycamore groves near grasslands or high marshes (Eisenmann, 1971). This species makes nests from sticks near the tops of small to large trees (20 to 100 feet above ground), including non-native species such as Eucalyptus (Dixon, *et. al*., 1957).

Kites were documented at several locations within and adjacent to the Proposed and Alternative Project survey areas in 2012 (refer to Figure 15). A family group was observed in late spring near the long, north-south segment of Alternative Project, indicating local reproduction. Activity suggestive of breeding was also observed along Warms Springs Creek, which is crossed by the southern portion of Alternative Project.

6.2.5.35 Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*; California Species of Special Concern, MSHCP Covered Species)

This small, nocturnal, seed-eating rodent occurs in sandy soils with herbaceous or sparse, low shrub vegetation on both the coastal and desert asides of the Peninsular ranges of southern California (Ingles, 1965; Jameson, 2004).

One individual of this subspecies was trapped in a mosaic of non-native grassland and coastal sage scrub at the southern end of Alternative Project in 2012 (refer to Figure 16). It is of potential occurrence in dry native habitats throughout the Proposed and Alternative Project survey areas.

6.2.5.36 San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*; California Species of Special Concern, MSHCP Covered Species)

This mid-sized, highly mobile plant eater can be locally common in large expanses of relatively flat, openly vegetated terrain supporting low human density, although this species is tolerant of agriculture, grazing, and other human landscape uses.

Jackrabbits were found in grassland, agriculture, and open coastal sage scrub in several locations throughout the Proposed and Alternative Project survey areas in 2012 (refer to Figure 16).

6.2.5.37 San Diego Desert Woodrat (*Neotoma lepida intermedia*; California Species of Special Concern, MSHCP Covered Species)

The San Diego desert woodrat is secretive and nocturnal, but is detectable indirectly by its conspicuous “midden” shelters constructed of twigs and other plant materials. This relatively large rodent occupies various types of shrub-dominated vegetation.

Individuals were trapped in grassland and open coastal sage scrub at several locations throughout the northern shared project alignment and Alternative Project survey areas in 2012 (refer to Figure 16).

6.2.5.38 Southern Grasshopper Mouse (*Onychomys torridus ramona*; California Species of Special Concern)

Unlike most other rodents of its size, this small mouse is primarily a predator of arthropods and small vertebrates (Ingles, 1965; Jameson, 2004). It occupies arid, shrub-dominated or herbaceous habitats with loose soils in the lowlands on both sides of the desert divide mountains.

One grasshopper mouse was trapped in grassland and open coastal sage scrub in the southern portion of the Alternative Project alignment (refer to Figure 16), although this species is likely to occur in any of open habitats throughout the Proposed and Alternative Project survey areas.

6.2.5.39 Stephen's Kangaroo Rat (*Dipodomys stephensi*; Federally Endangered, California Threatened, California Species of Special Concern, MSHCP Covered Species)

The Stephen's kangaroo rat inhabits sparse, low annual and perennial grasslands and open coastal sage scrub on relatively flat terrain (Thomas, 1973). It is a weak burrower, requiring relatively friable soil or the presence of larger fossorial mammals such as ground squirrels or gophers to loosen the soil. This moderate-sized granivorous species requires seeds from such species as buckwheat, grasses, and filaree (Thomas, 1975), but also feeds on green herbaceous growth.

This species' distribution has been reduced to several widely separated populations in Riverside and San Diego Counties by historical landscape conversion to agriculture and urban growth. The Stephen's kangaroo rat is the subject of a 1996 HCP for western Riverside County that pre-dates the MSHCP.

Stephen's kangaroo rats were detected by trapping in grassland and open sage scrub in four locations throughout the shared northern project alignment section and three locations along the Alternative Project (western section) (refer to Figure 15). All grassland, low ruderal, and sparse coastal sage scrub is considered occupied by this species.

6.2.5.40 Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*; California Species of Special Concern, MSHCP Covered Species)

This small, nocturnal mammal occurs in sandy, friable soils within a variety of open, arid vegetation types in the interior regions of cismontane southern California. It is restricted to fine soils of this type, which occur as a result of former water or wind deposition, by its weak burrowing abilities.

One individual was trapped in disturbed coastal sage scrub east of the north end of the Proposed Project in 2012 (refer to Figure 16).

6.2.6 Wildlife Movement

Wildlife movement activities usually fall into one of three categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); (2) seasonal migration;

and (3) movements related to home range activities (e.g.; foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

A number of terms such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" have been used in the context of wildlife movement studies to refer to areas where wildlife move from one area to another. To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are briefly identified as follows:

Travel Route – A landscape feature (such as ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (.e.g; water, food, cover, den sites).

Wildlife Corridor – A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by land uses unsuitable for wildlife. Larger, landscape-level corridors, often referred to as "habitat or landscape linkages", can provide both transitory and residential habitat for a variety of species.

Wildlife Crossing – A small, narrow passage or structure, relatively short in length and generally constricted in nature that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movements. Crossings can be constructed and can include culverts, underpasses, bridges, and tunnels. These often correspond to "choke points" along a movement corridor and may concentrate wildlife movement, possibly increasing risk of predation.

The Proposed Project is anticipated to occur in a landscape that is currently dedicated primarily to agricultural and passive preservation land uses and therefore is relatively unconstrained in terms of wildlife movement. Although much of the surrounding area has been converted to agricultural uses, areas of dense human development and infrastructure are currently relative small and discontinuous. The mosaic of vegetation and habitats is generally conducive to migratory and dispersal movements by animals in terms of presenting few significant barriers and hazards. Major watercourses are not tightly constrained by human development, are generally allowed to flow on the surface (as opposed to being enclosed within culverts), and are intersected by relatively few major roadways. The most heavily traveled roadways in the local landscape, such as Highway 79 and Domenigoni Parkway, are relatively few, are only two to four lanes wide, and generally free of peripheral barriers to wildlife movement, such as fences and walls. State Route 215, west of the Proposed Project, is a major fenced freeway that likely constitutes a significant barrier and hazard to wildlife movement.

This assessment of the capacity of this area to support various spatial movements by wide-ranging animals (i.e., daily patterns, dispersal, and migration) is based on field studies and other observations for the general landscape surrounding the Proposed and Alternative Projects. Based on the presence of populations of several animal species requiring either large tracts of unfragmented, year-round habitat (e.g., burrowing owl, sage sparrow, Stephen's kangaroo rat, loggerhead shrike, long-tailed weasel, and black-tailed jackrabbit) or wide, generally

unobstructed foraging areas (e.g., golden eagle, ferruginous hawk), it is here concluded that the surrounding landscape is relatively unconstrained for wildlife movement. The southern portion of the Valley South 115 kV Subtransmission Line Project occurs within or adjacent to a biological core area recognized by the MSHCP. Biological core areas are relatively conceptual, although based on actual large, unbroken areas of primarily native habitats. Their designation is initially for planning purposes, but it is expected that they will provide the ultimate backbone of the preserve system. Such biological core areas tend to be approximately defined in the early stages of NCCP implementation and therefore not precisely delineated. These are the areas to which percentage conservation guidelines are applied as the ultimate configuration of preserve versus development is resolved.

The southern section of the Proposed Project occurs near the eastern periphery of the biological core area while the western section of the Alternative Project lies within the biological core area. This MSHCP biological core area is shown in Figure 2.

Since the southern section of the Proposed Project traverses mostly through rural and suburban residential and commercial development, it will probably not be part of the ultimate preserve, although parts of it cross natural drainages that will certainly be part of the ultimate core-linkage system. Based on the existing development in the project area and the tenuous and conceptual nature of the biological core areas, it is determined that the Proposed and Alternative Projects will not adversely impact these biological core areas, either through avoidance or adherence to the MSHCP.

Constrained putative wildlife linkages are identified to the east and the west in the plan, although the general rural development with patches of native vegetation, including drainages, to the north likely also supports animal movement. Biological connectivity to the east, albeit fragmented in places, leads to extensive wildlands in the foothills and mountains of the San Jacinto Range.

The primary orientation of the Proposed and Alternative Projects is north – south, or perpendicular to recognized or proposed landscape linkages. Potential impacts to wildlife movement from construction and operation of the Proposed and Alternative Projects are discussed in section 7.9.

6.2.7 Jurisdictional Waters and Wetlands

TRC conducted a detailed jurisdictional waters and wetlands delineation in 2012, the results of which were presented in a report dated May 2012. This report is included herein as Appendix A. The Proposed and Alternative Project survey areas encompass portions of two named, blue-line drainages in addition to several unnamed intermittent drainages, as depicted on the USGS topographic maps (refer to Figure 4). The named drainages are Salt Creek and Warm Springs Creek.

The Valley South 115 kV Subtransmission Line Project transects a mixture of habitats and land uses, including agricultural and developed areas where local hydrology and drainage patterns have been significantly altered, as well as undeveloped land consisting of rugged foothills and low-gradient rolling hills. The undeveloped areas are composed primarily of ruderal, non-native grassland, and coastal sage scrub vegetation bordered by residential and agricultural land uses.

Surface water runoff within the Proposed and Alternative Project survey areas is primarily captured by perennial drainages and underground storm water systems associated with the urban developments.

Wetland soils are described in Section 6.1.4.4 of this report.

The Proposed Project survey area supports sixteen wetland or water features that are potentially subject to jurisdiction under the USACE, RWQCB, and/or CDFW. The location and limits of the USACE and RWQCB jurisdictional areas are depicted in Figure 19, Wetland Delineation Map Army Corps of Engineers and Regional Water Quality Control Board Jurisdictions, and those of the CDFW jurisdictional areas are depicted in Figure 20, California Department of Fish and Wildlife Wetlands Jurisdiction Map. The jurisdictional features are distributed among the subtransmission alternatives as follows:

- Features 1, 2, 3 and Salt Creek intersect the shared northern section of the Proposed and Alternative Projects;
- Feature 4 crosses both the Proposed and Alternative survey areas;
- Features 5 and 8 cross only the southern section of the Proposed Project;
- Features 9 through 14 and Warm Springs Creek cross only the western section of the Alternative Project.

Representative photographs, descriptions, and data forms for individual features are also provided in the complete report, which is included herein as Appendix A.

A number of non-jurisdictional swales occur throughout the Proposed Project survey area, particularly within agricultural lands north of Scott Road. These swales are typically low gradient, vegetated areas located at the bases of hillsides or other minor changes in topography. Several of the swales are regularly disked. These features are not considered jurisdictional and are generally characterized by low volume, infrequent or short duration flow or inundation, lack of an OHWM, lack of dominant hydrophytes, lack of defined bed and bank, and possibly the inability to support fish or other aquatic life. Any swale found to possess the characteristics of a natural waterway (i.e. vegetation, standing water, etc.) may fall within jurisdiction pursuant to the CFG Code and was therefore included within the assessment of jurisdiction.

The potential USACE jurisdiction within the Proposed and Alternative Project survey areas totals approximately 10.27 acres, of which 9.38 acres is wetland and 0.89 is WOUS. Locations and limits of these USACE jurisdictional areas are depicted in Figure 4 of Appendix A of this report. Acreages of USACE jurisdiction for individual features are summarized in Table 2, Summary of Potential 401 and 404 Jurisdiction.

Table 2
Summary of Potential 404 and 401 Jurisdiction

Feature Name	Waters of the U.S. (Acres)	Wetland Areas (Acres)	**Total** USACE **Jurisdiction (Acres)**	Approximate Linear Feet
Salt Creek		4.30	**4.30**	500
Feature 4	0.04	-	**0.04**	1,390
Feature 5		4.36	**4.36**	1,220
Feature 6	-	0.01	**0.01**	190
Feature 7		0.10	**0.10**	645
Feature 8	0.40	0.36	**0.76**	640
Feature 10	-	0.07	**0.07**	75
Feature 11	0.11	-	**0.11**	1,610
Feature 12	0.12	0.02	**0.14**	2,420
Feature 13	0.18		**0.18**	1,745
Feature 14	0.02	-	**0.02**	655
Warm Springs Creek	0.02	0.16	**0.18**	990
Totals 0.89		**9.38**	**10.27**	**12,080**

Salt Creek, Warm Springs Creek, and ten drainage features within the Proposed and Alternative Project survey areas have been determined to be USACE jurisdictional waters subject to regulation pursuant to Section 401 and 404 of the CWA and do not need to be addressed separately pursuant to Section 13260 of the State of California Water Code, the Porter-Cologne Act (refer to Table 2, above). However, four features are isolated waters that are potentially not subject to USACE jurisdiction. Since these features are outside of USACE jurisdiction, they may be subject to Waste Discharge Requirements (WDR) from the RWQCB pursuant to Section 13260 of the Porter-Cologne Water Quality Act. The totals of these isolated features are summarized in Table 3, Summary of Potential RWQCB Jurisdiction Subject to WDR Requirements. Locations and photographs of these features are provided in Appendix A of this report.

Table 3
Summary of Potential RWQCB Jurisdiction Subject to WDR Requirements

Feature Name	Waters Areas (Acres)	Wetland Areas (Acres)	Total RWQCB Jurisdiction (Acres)	Approximate Linear Feet
Feature 1	0.38		**0.38**	1,380
Feature 2	0.68		**0.68**	1,620
Feature 3	0.11		**0.11**	1,550
Feature 9		1.33	**1.33**	N/A
Totals 1.17		**1.33**	**2.50**	**4.550**

CDFW jurisdiction associated with the Proposed and Alternative Project survey areas totals approximately 14.98 acres, of which 13.51 acres consist of vegetated riparian habitat and 1.47 acres consist of unvegetated streambed. Only Feature 9, located along the Alternative Project, is not under CDFW 1602 jurisdictional due to its isolation and lack of defined bed and bank. CDFW jurisdiction includes all areas within USACE jurisdiction and areas potentially subject to WDR requirements (with the exception being Feature 9) in addition to adjacent associated riparian vegetation. The acreages of all features mapped during the field survey are listed in Table 4, Summary of CDFG Jurisdiction. Locations and photographs of these features are provided in Appendix A of this report.

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Table 4
Summary of CDFW Jurisdiction

Feature Name	CDFW Unvegetated (Acres)	CDFW Riparian (Acres)	Total CDFW Jurisdiction (Acres)	Approximate Linear Feet
Feature 1	0.38		**0.38**	1,380
Feature 2	0.63	0.32	**0.95**	1,620
Salt Creek		4.30	**4.30**	500
Feature 3	0.11		**0.11**	1,550
Feature 4	0.04	-	**0.04**	1,390
Feature 5		4.36	**4.36**	1,220
Feature 6	0.01		**0.01**	190
Feature 7	0.02	0.29	**0.31**	645
Feature 8	0.04	0.73	**0.77**	640
Feature 10		0.07	**0.07**	75
Feature 11	0.08	0.60	**0.68**	1,610
Feature 12	0.08	0.84	**0.92**	2,420
Feature 13	0.05	1.26	**1.31**	1,745
Feature 14	0.01	0.08	**0.09**	655
Warm Springs Creek	0.02	0.66	**0.68**	990
Totals 1.47		**13.51**	**14.98**	**16,630**

7.0 PROJECT IMPACTS

7.1 INTRODUCTION

Potential subtransmission project impacts to vegetation, habitats, hydrological features, other land cover types, and species are classified in a matrix with direct versus indirect effects on one axis and permanent versus temporary on the other axis. Direct impacts are those that involve ground disturbance and loss of the original ground cover due to grading, construction, and related activities such as maneuvering or staging. Land disturbance would include all areas affected by construction of the Proposed or Alternative Projects. Preliminary SCE engineering design estimates the total permanent land disturbance for the Proposed Project would be 13.9 acres (4 percent of the impact corridor described below) and that the Proposed Project would temporarily disturb an additional 163.9 acres (total 177.8 acres initially disturbed, or 57 percent of the impact corridor). Comparable construction design figures are not yet available for the western section of the Alternative Project, but impacts are anticipated to be proportional (per unit length) to the Proposed Project. Direct permanent impacts cause irreplaceable loss of previous ground cover types, whereas temporary impacts cause short-term damage to cover types that may or may not recover naturally.

Indirect impacts are those that do not cause ground disturbance, but are related to secondary effects, such as dust, noise, ground vibration, and visual disturbance.

This analysis of impacts from the Proposed Project is based on a superimposing of potential permanent and temporary direct impact areas on maps of biological resources within the Proposed Project survey area. A "corridor study" was undertaken for this analysis, as specific access routes, staging areas, and pole sites, as well as other Proposed Project features have not been finalized. Furthermore, this analysis addresses the Proposed Project alignment as well as the Alternative Project. All direct permanent and temporary construction activities, including structure installation/removal sites, stringing and pull sites, staging and stockpile areas, haul roads, and equipment work areas are assumed to be within the limits of the impact corridor, which is generally defined here as a 150-foot wide corridor located primarily on the anticipated construction sides of existing roads, plus specific outlying structures and work areas. This construction corridor is depicted in Figure 21, Potential Impact Corridor Map. The corridor is depicted differently for the Proposed and Alternative Projects in the figure because engineering data are not currently available for the latter. Figure 21 shows a 300-foot impact corridor comprising 150 feet on either side of roadways closely paralleled by existing transmission lines, although it is assumed that construction will occur only on one side, as for the Proposed Project. Therefore, potential acreages of impacts to cover types for the Alternative Project are reduced by 50% in the discussion below to provide a more direct comparison. Potential direct impact areas occurring beyond the limits shown will require additional analysis. Less tangible indirect impacts are expected to extend beyond the impact corridor in many cases.

This analysis is necessarily generic, i.e., identifying the maximal potential impacts, as if siting of construction features with regard to existing natural and anthropogenic landscape elements will be indiscriminant. However, under the assumption that actual project siting will selectively avoid sensitive natural features where possible and the understanding that actual impact

footprints will be only a subset of the generic 150-foot corridor calculations below, it may be assumed that actual, final impacts will result in the minimal loss of sensitive features.

Biological impacts associated with the Proposed and Alternative Projects are evaluated with respect to the following special status biological values:

- Federally or State-listed Endangered or Threatened species of plants or wildlife;
- Non-listed species that meet the criteria in the definition of Rare or Endangered in the *CEQA Guidelines* (i.e., Section 15380);
- Species designated as California Species of Special Concern;
- Streambeds, wetlands, and their associated vegetation;
- Habitats suitable to support federally or State-listed Endangered or Threatened plant or wildlife species;
- Habitat, other than wetlands, considered special status by regulatory agencies (e.g., the USFWS, the CDFW) or resource conservation organizations;
- Criteria in the MSHCP; and
- Other species or issues of concern to regulatory agencies or conservation organizations.

Forty-two special status plant and 62 special status animal species were evaluated for potential to occur within the Proposed and Alternative Project survey areas. These species are identified and discussed in Appendices I and J of the BRA for the Proposed Project. Several of these species have been documented through survey and others are considered likely to occur.

Construction activities associated with installation of the subtransmission line could result in adverse effects to special status plant and animal species, either directly or through destruction or degradation of habitat. Construction yards may not be graded in all cases, but it is anticipated that these areas will be damaged by vehicle parking and storage of materials. Sensitive species present during construction in affected areas could be crushed from operation of heavy machinery and foot traffic. Construction activities could destroy or degrade existing habitat, including damage to soil surface characteristics and damage or loss of soil seed banks. The loss of or damage to topsoil may increase the likelihood of highly competitive exotic plant establishment in native communities. Such establishment can result in suppressed native plant recruitment, altered community structure, degradation or elimination of habitat for native wildlife, and increased amounts of food and cover for undesirable nonnative wildlife. Soil disturbance can result in erosion, alter hydrology and sedimentation rates, and facilitate the introduction of non-native plant species into a community. Trenching will disturb vegetation and have many of the same potential effects to special status plant species as construction of the subtransmission line.

Construction at the substations would have no effect on special status plant species, as it would occur within the existing substation grounds. The substation areas are covered with gravel or pavement and do not support sensitive plant species.

7.2 TYPES OF DIRECT IMPACTS

Preliminary engineering designs provide estimates of actual impacts from the various actions and phases of the Proposed Project (see section 7.1), although precise siting of construction features is not final. These estimated acreages are presented above and in this section for comparison with acreage figures for potential impacts within corridors given by cover type in Table 5.

7.2.1 Structures

The subtransmission line will consist of new pole structures, suspended conducting lines, as well as permanent access routes and access/work areas for periodic operations and maintenance activities. Installation of new structures and access will constitute direct, permanent impacts. Additionally, old structures will require removal, resulting in direct, temporary impacts. Engineering estimates of structure quantity and required work areas for the Proposed Project indicate 303 new structures of various types. New structures and access routes will result in approximately 98.7 acres of direct disturbance, although only 13.9 of these acres are expected to be permanently disturbed.

The removal of 265 existing structures (poles) is anticipated to disturb about 23.5 acres of ground, all of which will be temporary.

7.2.2 Work Areas

Work areas will be various in size and purpose, including structure installation perimeters, erection of temporary guard structures, modification of existing structures, stringing and splicing of cables, excavation for underground conduits and vaults, and staging of materials and equipment. Collectively, these actions are expected to disturb approximately 46.5 acres, all of which will be temporary.

7.2.3 Post-Construction Activities (Project Operation)

Operation and maintenance activities for the eventual subtransmission line will be necessary to ensure reliable service, as well as the safety of utility workers and the general public, as mandated by the CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under operational control of the California Independent System Operator.

The subtransmission and distribution lines would be maintained in a manner consistent with CPUC General Order 95 and General Order 128 as applicable. SCE inspects subtransmission overhead and underground facilities minimally once per year via ground and/or aerial inspection. Maintenance activities include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, re-stringing of conductors, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Most regular operation and maintenance (O&M) activities of overhead facilities are performed from existing access roads with no surface disturbance. However, repairs to existing facilities could extend into adjacent undisturbed areas, as in the case of establishment of temporary wire-pulling sites and passing of conductors through existing vegetation.

Routine access road maintenance is conducted annually or as needed. Road maintenance could include maintaining vegetation-free corridors; smoothing over washouts, eroded areas, and washboard surfaces; and constructing or repairing water conveyance structure such as ditches, berms, bars, and culverts.

Periodic tree pruning may be performed at some structure sites for compliance with existing state and federal laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters.

Clearance of brush and weeds around poles is required by local jurisdictions on fee-owned ROWs for fire protection. Ten-foot radial clearance around non-exempt poles (as defined by California Code of Regulations Title 14, Article 4) and 25-50 foot radial clearance around non-exempt towers (as defined by California Code of Regulations Title 14, Article 4) is maintained in accordance with Public Resource Code 4292.

Some poles do not have existing access roads and are accessed on foot, by helicopter, or by temporary vehicle access routes.

Additionally, SCE conducts a wide variety of emergency repairs of any kind, in any location, with little or no notice.

7.3 TYPES OF INDIRECT IMPACTS

Noise, ground vibration, and visual disturbance from human activity during the construction could adversely affect wildlife by frightening individuals from home ranges, masking communication, impairing foraging success, interfering with predator detection, and disrupting reproduction. These effects are significant when they adversely affect the life cycles of sensitive species or constrain animal movement through a wildlife corridor.

Fugitive dust from grading and equipment movement can cover biological features close to construction areas, including direct disturbance or respiratory impairment of sedentary animals and reduction in photosynthesis by plants.

Toxic substances can kill wildlife and plants or prevent new growth where soils or water are contaminated. Toxic substances can be released into the environment through several scenarios, including planned or accidental releases, leaching from stored materials, pesticide or herbicide use, or fires, among others. Accidental releases could occur from several sources such as leaking equipment or fuel spills during the course of the construction.

7.4 SIGNIFICANCE CRITERIA

Environmental impacts from the Proposed Project relative to biological resources are assessed using impact significance criteria that mirror the policy contained in CEQA Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State to:

> *Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities.*

The determination of significant effects or impacts from a project plays a critical role in the CEQA process. According to CEQA Section 15064.7 (Thresholds of Significance), each public agency is encouraged to develop and adopt, by ordinance, resolution, rule or regulation, their own significance thresholds that the agency would use in determining the impact of proposed actions. A significance threshold defines the quantitative, qualitative, or performance limits of a particular environmental effect. If these thresholds are exceeded, the agency would consider it to be significant.

CEQA provides guidance for the development of significance thresholds for impacts to biological resources primarily through Section 15065, Mandatory Findings of Significance, and the *CEQA Guidelines*, Appendix G, Environmental Checklist Form. Section 15065(a) states that a project may have a significant effect where:

> *The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species.*

Appendix G of the *CEQA Guidelines* is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including candidate, sensitive, or other special status species; riparian habitat or other special status natural communities; federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and adopted habitat conservation plans. These factors are considered through the checklist of questions answered during the Initial Study process used to determine a project's appropriate environmental documentation (i.e., Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report [EIR]). Because these questions are derived from standards employed in other laws, regulations, and commonly used thresholds, it is reasonable to use these standards as a basis for defining significance thresholds in an EIR. For each of the thresholds identified below, the section of CEQA upon which the threshold is based has been provided. For the purpose of this analysis, impacts to biological resources are considered significant (before calculating the offsetting impacts of mitigation measures) if one or more of the following conditions would result from implementation of a proposed project:

- The project has the potential to substantially degrade the quality of the environment (Section 15065[a]).
- The project has the potential to substantially reduce the habitat of any fish or wildlife species (Section 15065[a]).
- The project will cause fish or wildlife populations to drop below self-sustaining levels (Section 15065[a]).

- The project will threaten to eliminate a plant or animal community (Section 15065[a]).
- The project will reduce the number or restrict the range of an Endangered, Rare, or Threatened species (Section 15065[a]).[1]
- The project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a Candidate or special status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS (*CEQA Guidelines*, Appendix G, IV[a]).
- The project has a substantial adverse effect on any riparian habitat or other special status natural community identified in local or regional plans, policies, regulations, or by the CDFW or the USFWS (*CEQA Guidelines*, Appendix G, IV[b]).
- The project has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, among others) through direct removal, filling, hydrological interruption, or other means (*CEQA Guidelines*, Appendix G, IV[c]).
- The project interferes substantially with the movement of any native or migratory fish or wildlife species; inhibits established native resident or migratory wildlife corridors; or impedes the use of native wildlife nursery sites (*CEQA Guidelines*, Appendix G, IV[d]).
- The project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (*CEQA Guidelines*, Appendix G, IV[e]).
- The project conflicts with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State Habitat Conservation Plan (*CEQA Guidelines*, Appendix G, IV[f]).

In order to evaluate whether an impact to biological resources would result in a "substantial adverse effect", both the resource itself and how that resource fits into a regional context must be considered. The Proposed Project's regional setting includes the MSHCP.

For impact analysis purposes, a "substantial adverse effect" is defined as the loss or harm of a magnitude which, based on current scientific data and knowledge, would (1) substantially diminish population numbers of a species or distribution of a habitat type within the region or (2) eliminate the functions and values of a biological resource in the region.

[1] Endangered and Threatened species, as used in this threshold, are those listed by the USFWS and/or the CDFW as Threatened or Endangered. Section 15380 of CEQA indicates that a lead agency can consider a non-listed species (e.g., CNPS List 1B plants) to be Endangered, Rare, or Threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of "Rare" or "Endangered". For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for "Rare" and "Endangered" according to Section 15380 of CEQA.

7.5 POTENTIAL IMPACT ACREAGES

Table 5, Vegetation Impacts within a 150-Foot Corridor along the Proposed and Alternative 115 kV Subtransmission Line Projects, provides vegetation and other cover type acreages occurring within the defined impact corridors. This table distinguishes the four northern outlying staging yards, two of which occur northwest of the Valley Substation and two within the substation, from the shared northern section (see section 6.2.2). Cover types are classified by Holland-Oberbauer codes (refer to Table 1). As stated above, these collective acreages characterize the area within which all direct impacts are expected to occur (i.e., 150-foot corridor). Final project design, including selective siting of structures and other features, will determine precise impacts.

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Table 5
Vegetation Impacts within a 150-Foot Corridor along the Proposed and Alternative 115 kV Subtransmission Line Projects

Four Outlying Staging Yards	Shared Northern Project Section	Proposed Project (Northern and Southern Sections)	Alternative Project (Northern and Western Sections)(1)	Standard Classification Schemes	
Acres				Holland 1986	Sawyer et al. 2009
0.00	0.02	0.88	1.01	Southern Cottonwood - Willow Riparian Forest (61330)	*Populus fremontii* forest alliance
0.00	0.00	0.00	0.33	Central Coast Arroyo Willow Riparian Forest (61230)	*Salix lasiolepis* shrubland alliance
0.00	0.00	0.00	0.25	Southern Willow Scrub (63320)	*Baccharis salicifolia* shrubland alliance
0.00	0.55	1.11	0.55	Mulefat Scrub (63310)	*Baccharis salicifolia* shrubland alliance
0.00	4.57	0.00	2.34	Diegan Coastal Sage Scrub: Inland Form (32520)	*Eriogonum fasciculatum* - *Salvia apiana* shrubland alliance
0.00	0.00	4.59	18.14	Coastal Sage Scrub (32500)	*Artemisia californica* - *Eriogonum fasciculatum* shrubland alliance and *Artemisia californica* - *Eriogonum fasciculatum* shrubland alliance
0.00	0.00	0.00	0.86	Chamise Chaparral (37200)	*Adenostoma fasciculatum* shrubland alliance
0.00	0.00	0.00	1.84	Coastal Sage - Chaparral Scrub (37G00)	*Keckiella antirrhinoides* shrubland alliance
2.33	64.89	90.43	84.24	Ruderal / Disturbed Habitat (11300)(2)	*Bromus* - *Brachypodium distachyon* semi-natural stands
0.00	9.87	15.22	18.23	Non-native Grassland (42200)	*Bromus* - *Brachypodium distachyon* semi-natural stands and *Avena* semi-natural herbaceous stands

Table 5 (Continued)

Vegetation Impacts within a 150-Foot Corridor along the Proposed and Alternative 115 kV Subtransmission Line Projects

Four Outlying Staging Yards	Shared Northern Project Section	Proposed Project (Northern and Southern Sections)	Alternative Project (Northern and Western Sections)(1)	Standard Classification Schemes	
Acres				Holland 1986	Sawyer et al. 2009
13.71	45.85	86.45	88.22	Urban / Developed (12000)(2)	No counterpart
0.00	1.19	3.93	2.39	Eucalyptus Woodland (79100)(2)	*Eucalyptus* semi-natural woodland stands
0.00	0.00	0.02	0	Valley Freshwater Marsh (52410)	*Typha* / *Schoenoplectus* herbaceous alliances
0.00	0.00	0.00	0.58	San Diego Mesa Claypan Vernal Pool (44322)(2)	vernal pools, seeps, swales, and plains(3)
0.00	81.00	93.79	94.30	Agriculture (18000)(2)	No counterpart
0.00	1.18	1.18	1.18	Disturbed Wetland (11200)(2)	*Bolboschoenus maritimus* herbaceous alliance
0.00	0.00	0.00	0.00	Fresh water (64140)(2)	No counterpart
Total: 16.04	**Total: 209.11**	**Total: 297.61**	**Total: 314.45**		

(1) Pole location data not currently available for Western Section route. However, the alignment will be primarily located on only one side of the road, so only 50% of the vegetation acreages from the 300-foot corridor are given here.

(2) Vegetation types not addressed in Holland 1986, so classified according to Oberbauer et al. 2008.

(3) Due to species composition, not resolvable to vegetation alliance level under this system.

Table 5 indicates that biologically less significant vegetation / cover types (i.e., developed, ornamental, and agriculture) comprise 251.62 acres or 60 percent of the area within the impact corridor. However, much of this acreage consists of private development and agriculture, which may also require some level of avoidance or mitigation.

7.6 POTENTIAL DIRECT BIOLOGICAL IMPACTS BY PROJECT SEGMENT

Potential impacts to sensitive habitats, hydrological features, and special status plant and animal species are assessed here qualitatively on the basis of vegetation distribution and documented species locations from surveys conducted for the Valley South 115 kV Subtransmission Line Project, as well as data base sources (e.g., CNDDB). Additional species not detected, but with various levels of potential to occur within the Proposed Project survey area, are addressed in Appendices I and J.

The actual or potential occurrence of species within the impact corridor was assessed in the context of the significance criteria described above to determine whether impacts from the Proposed Project on these resources would be significant.

The following system of Proposed and Alternative Project segments based on road intersections (Figure 22, Reference Segment Map) provides a convenient reference system for analyzing and discussing impacts and, in conjunction with Figures 13 through 20, serves to address the distribution of special status biological features in greater detail. Therefore, each segment is discussed below in terms of habitats and species subject to direct impacts from the Proposed and Alternative Projects.

Segments 1 through 6 correspond to the "Shared Northern Project Section" in Table 5. Segments 7 through 9 correspond to "Proposed Project Southern Section". Segment 10 corresponds to "Alternative Project Western Section".

7.6.1 Segment 1 (McLaughlin, Briggs, and Matthews Roads, and Grand Avenue from Valley Substation to junction with Leon Road)

The 150-foot impact corridor includes almost entirely agriculture and ruderal (non-native grassland) vegetation. Two disturbed, unvegetated drainage features and one drainage supporting mulefat scrub occur within the corridor.

No rare plants were found within the survey area for this segment.

These impact areas and adjacent parts of the survey area (500-foot buffer) supported coastal western whiptail and burrowing owl in 2012. Numerous documented animal burrows indicated the potential of all of this area of open farmland (active and ruderal fields) to be foraging or roosting habitat for burrowing owl. Additionally, foraging white-tailed kites and loggerhead shrikes were documented here. One active red-tailed hawk nest was found in a non-native tree in proximity to the Proposed Project survey area.

Mammal trapping along this segment revealed that the disturbed fields are occupied by Stephen's kangaroo rat. Black-tailed jackrabbits were commonly observed here as well.

A small portion of a rocky ridge supporting coastal sage scrub near the intersection of Matthews and Briggs roads occurs within the impact corridor and was found to support California gnatcatchers and San Diego desert woodrat. Additionally, Los Angeles pocket mouse was detected by trapping in open, rocky coastal sages scrub east of the alignment.

7.6.2 Segment 2 (Leon Road between Grand Avenue and Olive Avenue)

This relatively short segment of the impact corridor supports almost entirely agriculture and ruderal (non-native grassland) vegetation. No wetland or drainage features occur within this segment of the corridor.

No rare plants were found within the survey area for this segment.

No special status amphibian or reptile species were documented in this segment in 2012. Very few animal burrows were found and no observations of burrowing owl were made. Foraging white-tailed kites, loggerhead shrikes, and black-tailed jackrabbits were documented in the open farmland (active and ruderal fields). Three active red-tailed hawk nests were found in non-native trees within one half-mile of the alignment.

7.6.3 Segment 3 (Leon Road between Olive Avenue and Domenigoni Parkway)

A short segment that basically represents the span across the Salt Creek. Vegetation within the impact corridor is all agriculture and ruderal / non-native grassland, except for the disturbed wetland in the channel bottom.

Several stands of smooth tarplant were documented on disturbed terraces and embankments on both sides of the channel. Western spadefoot (toad) was found in the channel. White-tailed kite was found foraging on the agricultural uplands.

7.6.4 Segment 4 (Leon Road between Domenigoni Parkway and Craig Road)

The 150-foot impact corridor for this long segment includes almost entirely agriculture and ruderal (non-native grassland) vegetation, although it passes close by a stand of coastal sage scrub south of Ano Crest Road. The corridor crosses one small, disturbed east-west drainage feature just north of Craig Road.

Smooth tarplant was found to be widely distributed in disturbed fields in the northern section between the Domenigoni Parkway and Norma Way. A small stand of clustered / San Diego tarweed occurs in non-native grassland on the west side of the sharp bend in Leon Road south of Ano Crest Road.

Coastal sage scrub and grassland within the impact corridor and adjacent parts of the survey area (500-foot buffer) supported coastal western whiptail and San Diego horned lizard in 2012. Granite spiny lizard occurs on boulder outcrops. Abundant grassland and open farmland with

mammal burrows provides potential foraging or roosting habitat for burrowing owl. Foraging loggerhead shrikes were documented in open terrain. California gnatcatchers and San Diego desert woodrat occur in the coastal sage scrub described above. At least three active red-tailed hawk nests were found in non-native trees in proximity to the Proposed Project survey area.

Mammal trapping along this segment revealed that the disturbed fields north of Craig Road are occupied by Stephen's kangaroo rat.

7.6.5 Segment 5 (Leon Road between Craig Avenue and Garboni Road)

Despite its short length, the 150 foot impact corridor for this segment includes significant coastal sage scrub where Leon Road curves around a steep, rocky knoll while the current alignment runs due north-south over the knoll. Other vegetation comprises non-native grassland / ruderal and agriculture. No jurisdictional wetlands / waters intersect this segment.

No special status plants were found within the survey area (500-foot buffer) for this segment.

Granite spiny lizard was documented on boulder outcrops on the knoll. An active red-tailed hawk nest occurred in a non-native tree just east of Leon Road. A pair of golden eagles was observed on a boulder outcrop in the fields east of Leon Road on one date in spring. Nesting of this species is unlikely so close to the alignment, but presence of the species indicates at least periodic use for foraging.

California gnatcatcher was not detected in the coastal sage scrub, but this segment is immediately adjacent to designated Critical Habitat for the species (refer to Figure 8).

7.6.6 Segment 6 (Leon Road between Garboni Road and Scott Road)

The impact corridor of this segment passes through agriculture, ruderal / non-native grassland, and rural residential. A confluence of small, disturbed drainages occurs within the corridor at the intersection of Leon and Scott Roads. A small stand of smooth tarplant occurs along the edge of Scott Road, just east of the Proposed Project survey area.

No special status species were detected along this segment. However, one unidentified (inactive) raptor nest was found west of the alignment.

7.6.7 Segment 7 (Leon Road between Scott Road and Keller Road)

The impact corridor corresponding to this segment includes almost entirely developed or ruderal rural yards with ornamental plantings. No jurisdictional waters / wetlands were documented in this segment.

No special status plants were found within the survey area (500-foot buffer)for this segment.

No special status wildlife species were documented, with the exception of two red-tailed hawk nests in non-native trees just east and west of the alignment.

7.6.8 Segment 8 (Leon Road between Keller Road and Winchester Road)

The impact corridor corresponding to this segment includes predominantly developed or ruderal rural yards and intensively cultivated agricultural fields. Only the southern section (parallel to the abandoned, north-south section of Leon Road) supports largely native habitats: marshy wetlands, patches of willow riparian scrub, and surrounding non-native grassland on the wide creek that drains French Valley.

No special status plants were found within the Proposed Project survey area (500-foot buffer) for this segment.

A concentration of aquatic reptile species was documented on a disturbed drainage northwest of the intersection of Leon and Baxter Roads. Special status species include glossy snake and western spadefoot.

The French Valley drainage supported a short-term occurrence of least Bell's vireo in a small patch of willows. The surrounding march vegetation supports Virginia rail.

7.6.9 Segment 9 (Leon Road between Winchester Road and Benton Road)

This terminal segment passes through disturbed, undeveloped terraces of primarily ruderal vegetation (former farmland) between two areas of dense urban development. The 150-foot impact corridor includes parts of a disturbed, east-west drainage that supports riparian scrub.

No special status plants were found within the Proposed Project survey area (500-foot buffer) for this segment.

Northern harrier was observed foraging in these fields. The disturbed terraces support a population of horned larks.

7.6.10 Segment 10 (Alternative Project: Scott, Menifee, Clinton Keith, and Los Alamos Roads)

The western section of the Alternative Project consists of a long east-west stretch along Scott Road between Leon and Menifee Roads, a north-south stretch along Menifee Road from Scott Road to Clinton Keith Road, and a short east-west stretch roughly parallel to Clinton Keith and Los Alamos Roads. This route represents about half of the distance of Alternative Project. Therefore, assuming a similar 150-foot wide impact corridor, impacts are expected to occur within an area of about 150 acres. However, due to the current uncertainty regarding the location of the alignment with respect to the roads, a 300-foot potential impact buffer (150 feet on either side) is analyzed here. However, for purposes of direct comparison of potential impacts with those for the Proposed Project, only 50% of the potential impact acreages for this wider buffer are presented in Table 5.

The Scott Road section runs through a mosaic of agricultural fields, rural development, and dense suburban development. Impacts are expected to be largely or completely confined to agricultural, ruderal, and other disturbed vegetation or other cover types. One disturbed,

seasonal, possibly anthropogenic wetland basin occurs northeast of the intersection of Scott and Menifee Roads. No special status plant or animal species were documented along this section, although designated Critical Habitat for spreading Navarretia (*Navarretia fossalis*) occurs at the wetland basin (see Figure 8).

The north-south Menifee Road section runs partially through an undeveloped easement within dense suburban development. The southern portion of Menifee Road passes through an extensive undeveloped area of native habitats such as grassland, coastal sages scrub, and riparian forest. Similarly, the Clinton Keith – Los Alamos sections runs through a mosaic of native habitats, but includes sparse rural development as well.

These two sections include the largest concentrations of special status plants and animals species documented during the course of surveys for the Valley South 115 kV Subtransmission Line Project. One channelized and four natural drainages with native riparian vegetation cross the Alternative Project, including Warm Springs Creek, a major tributary of the Santa Margarita River.

Small to large stands of long-spined spineflower, clustered / San Diego tarweed, Parry's spineflower, and smooth tarplant occur in grassland and open coastal sage scrub.

Designated Critical Habitat for the Quino checkerspot occurs on both sides of Menifee Road, but surveys for this species will not be conducted until spring of 2013.

Populations of San Diego horned lizard, coastal western whiptail, orange-throated whiptail, and red diamond rattlesnake occur in coastal sage scrub and grassland. Two-striped garter snake was found at several creek crossings Granite spiny lizard is common on boulder outcrops. Western spadefoot occurs on Warm Springs Creek.

California gnatcatcher, sage sparrow, and rufous-crowned sparrow occupy coastal sage scrub. This section of the Alternative Project also passes through a large area of designated Critical Habitat for the gnatcatcher. Several red-tailed hawk nests, Cooper's hawk, and white-tailed kite were found in adjacent non-native trees and riparian forest associated with the Warm Springs Creek watershed. Northern harrier was observed over grassland. A single detection of willow flycatcher was made on Warm Springs Creek.

Special status mammals documented along the Menifee – Clinton Keith - Los Alamos Road section of the Alternative Project include long-tailed weasel, black-tailed jackrabbit, Stephen's kangaroo rat, northwest San Diego pocket mouse, San Diego desert woodrat, and southern grasshopper mouse.

7.7 IMPACTS IN THE CONTEXT OF THE MSHCP

As discussed in section 3.3.1, the Valley South 115 kV Subtransmission Line Project occurs within the conservation planning framework of the MSHCP. The system of Area Plans, Subunits, and Criteria Cells provides conservation objectives or criteria for species, vegetation / habitat acreages, and preserve function features designed to achieve plan goals at various spatial scales.

Section 3.3.1 and Figure 3 identify the general planning units within which the Proposed and Alternative Projects occur. Table 6 provides specific information on applicable planning units at all scales within one mile of the Proposed and Alternative Projects.

Table 6
Portions of the MSHCP Planning Areas Intersected by the Valley South 115 kV Subtransmission Line Project

Area Plan	Subunit	Criteria Cells / Cell Groups within 1 mile	Planning Species	Bio Issues & Considerations
Mead Valley	**4:** San Jacinto River – Lower	**Ungrouped cells:** 3173, 3276, 3377, 3378	loggerhead shrike, mountain plover, white-faced ibis, vernal pool fairy shrimp, LA pocket mouse, Coulter's goldfields, Davidson's saltscale, San Jacinto Valley crownscale, spreading Navarretia, thread-leaved Brodiaea, vernal barley, Wright's tricocornis	• Conserve soils for special status plants • Conserve vernal pools • Maintain San Jacinto River linkage • Maintain floodplains • Determine presence of core for LA pocket mouse
Harvest Valley / Winchester	None	No cells	burrowing owl, mountain plover, Riverside fairy shrimp, vernal pool fairy shrimp, California Orcutt grass, little mousetail, spreading Navarretia, thread-leaved Brodiaea, vernal barley	• Conserve alkali soils for plant species • Conserve vernal pools for plants and fairy shrimp • Conserve grassland for various species

Table 6 (continued)
Portions of MSHCP Planning Areas Intersected by Proposed Project

Area Plan	Subunit	Criteria Cells / Cell Groups within 1 mile	Planning Species	Bio Issues & Considerations
Sun City / Menifee Valley	**1:** Warm Springs Creek / French Valley	**Group A:** cells 5066, 5163, 5165; **Group B:** cells 5167, 5168	sage sparrow, burrowing owl, Calf. gnatcatcher, grasshopper sparrow, rufous-crowned sparrow, Quino checkerspot, bobcat, long-spined spineflower, Munz's onion, Palmer's grappling hook	• Contribute to E-W linkage • Maintain southern core for several species • Conserve clay soils for plants
Southwest Area	**5:** French Valley / Lower Sedco Hills	**Group X:** cells 5260, 5265, 5266, 5367, 5369, 5370; **Group Y:** cells 5256, 5259, 5361, 5366; **Group Z:** cells 5483, 5475, 5476, 5576, 5569, 5570; **Group A':** cells 5673, 5681, 5671; **Group B':** cell 5672; **Group F':** cells 5783, 5786; **Group C':** cell 5784; **Ungrouped cells:** 5073, 5074, 5174, 5175, 5378, 5479, 5477, 5572, 5575, 5677, 5778	sage sparrow, horned lark, Calif. gnatcatcher, grasshopper sparrow, rufous-crowned sparrow, Quino checkerspot, bobcat, LA pocket mouse, western pond turtle, long-spined spineflower, Munz's onion, Palmer's grappling hook	• Provide linkage to SW • Conserve clay soils for plants • Maintain northern core for several species • Determine core for LA pocket mouse along Warm Springs Cr. • Maintain habitat cores for various species.

The portions of the Proposed and Alternative Projects within these Area Plans are discussed below in terms of potential impacts to identified natural features, in the context of the significance criteria in section 7.4. The scheme of project segments presented in section 7.6 is

incorporated to compare actual findings from surveys with criteria and focal planning species from the MSHCP.

7.7.1 Mead Valley

One isolated, outlying, paved material staging yard of the Valley South 115 kV Subtransmission Line Project is located in a developed area northeast of the intersection of Case Road and South G Street in southwestern Perris (see Figure 3). This site is located approximately 0.2 miles northwest of several criteria cells occurring in farmland.

Due to the addition of the staging yard to the subtransmission project in late 2012, no biological surveys were conducted in this area. However, the predominantly rural development of the area surrounding the single project feature, as well as the fact that access to this fully developed work site will be by existing roads, indicates that no impacts to any biological features are anticipated from this action.

7.7.2 Harvest Valley / Winchester

The majority of the shared project northern section passes through the western edge of this Area Plan and along its boundary with the Sun City / Menifee Valley Area Plan (see segments 1 through 6 in Figure 20). Although largely under agricultural land uses with areas of passively preserved natural vegetation and very sparse human residential development, the only part of this Area Plan within the Criteria Area consists of two small Criteria Cell groups near Diamond Valley Lake, several miles to the east.

Most of the Planning Species identified for this Area Plan in Table 6 are associated with vernal pools within the Criteria Cell groups. Nevertheless, the following special status species were documented within this Area Plan in association with the Valley South 115 kV Subtransmission Line Project and others are likely to occur (see Appendices I and J).

- smooth tarplant
- clustered / San Diego tarweed
- western spadefoot
- coastal western whiptail
- San Diego horned lizard
- granite spiny lizard
- white-tailed kite
- golden eagle
- red-tailed hawk (nest)
- burrowing owl
- loggerhead shrike

- California gnatcatcher
- Stephen's kangaroo rat
- black-tailed jackrabbit
- San Diego desert woodrat
- Los Angeles pocket mouse

Burrowing owl was the only Planning Species documented on the western side of this Area Plan in association with the Proposed Project. However, several other important species may incur significant permanent and temporary impacts from subtransmission construction. Assuming full avoidance of special status habitats such as coastal sage scrub, riparian vegetation, and wetlands, these species include smooth tarplant, clustered / San Diego tarweed, nesting raptors and other birds, burrowing owl, and Stephen's kangaroo rat. These species are either associated with non-native grassland, ruderal vegetation, and agricultural margins or are sensitive to disturbance during the nesting season.

Considering the non-continuous nature of the ultimate subtransmission line and the fact that the majority of impacts will be temporary, these measures are expected to reduce any impacts to below the level of significance.

The application of the above measures is also expected to satisfy the Biological Issues & Considerations identified in Table 6. Consideration of vernal pools is not applicable to the vicinity of the Proposed Project.

7.7.3 Sun City / Menifee Valley

In addition to the segments of the Proposed Project that occur along the border with the Harvest Valley / Winchester Area Plan discussed above, approximately half of the Alternative Project occurs within the southwestern portion of this Area Plan (see Figure 3 and segment 10 in Figure 20). This consists of the Scott Road section and the northern end of Menifee Road.

No special status plant or animal species were detected within this narrow area, although several species associated with disturbed grassland and fallow farmland, such as smooth tarplant, burrowing owl, and foraging raptors, have the potential to occur (see also Appendices I and J).

The dispersed nature of the final project along existing roads is not expected to impair current levels of wildlife linkage through the area by exacerbating the barrier provided by the Scott Road corridor.

7.7.4 Southwest Area

The southern approximate half of the Alternative Project and southern section of the Proposed Project pass through the north-central part of this large Area Plan. The alignment generally follows unpaved, lightly traveled rural roads which occur within an extensive matrix of largely undisturbed native vegetation types, primarily grassland, coastal sage scrub, and riparian types.

This portion of the Alternative Project constitutes one of the core habitat areas within the MSHCP. Biological surveys of this area revealed it to support the greatest diversity of special status habitats and species adjacent to the Valley South 115 kV Subtransmission Line Project.

The following special status species were documentedin the course of project surveys within this Area Plan and others are likely to occur (see Appendices I and J). Species indicated by * are also MSHCP Planning Species (see Table 6).

- smooth tarplant
- clustered / San Diego tarweed
- long-spined spineflower *
- Parry's spineflower,
- western spadefoot
- coastal western whiptail
- orange-throated whiptail
- San Diego horned lizard
- granite spiny lizard
- red diamond rattlesnake
- glossy snake
- white-tailed kite
- northern harrier
- Cooper's hawk
- red-tailed hawk (nest)
- burrowing owl
- willow flycatcher
- California gnatcatcher *
- sage sparrow *
- rufous-crowned sparrow *
- long-tailed weasel
- black-tailed jackrabbit
- Stephen's kangaroo rat
- northwest San Diego pocket mouse
- Los Angeles pocket mouse *

- San Diego desert woodrat
- southern grasshopper mouse

The above list indicates that several other important species occur in the vicinity of the Proposed and Alternative Projects and some may incur significant permanent and temporary impacts due to vulnerability to direct and indirect impacts. Assuming full avoidance of special status habitats such as coastal sage scrub, riparian vegetation, and wetlands, these species include smooth tarplant, clustered / San Diego tarweed, long-spined spineflower, Parry's spineflower, western spadefoot, coastal western whiptail, orange-throated whiptail, nesting raptors and other birds, burrowing owl, Stephen's kangaroo rat, northwest San Diego pocket mouse, Los Angeles pocket mouse, and southern grasshopper mouse. These species are either sessile (plants), have high potential to burrow or nest directly in non-native grassland and ruderal vegetation, or are sensitive to noise, vibration, or dust disturbance during the reproductive season (late winter through summer).

Considering the non-continuous nature of the Proposed and Alternative Projects and the fact that the majority of impacts will be temporary, these measures are expected to reduce any impacts to below the level of significance. More localized pre-construction surveys may be required to refine the distributions of features such as rare plants for avoidance. Failure to avoid such impacts will require the development of a DBESP.

The application of the above measures is also expected to satisfy the Biological Issues & Considerations identified in Table 6. The dispersed nature of the final project along existing roads is not expected to compromise current levels of wildlife linkage through the area and measures applied during construction are expected to minimize the impairment of wildlife movement. The Alternative Project will also not compromise the current value of the surrounding undeveloped landscape as a core habitat area.

7.8 MANAGEMENT RECOMMENDATIONS FOR IMPACT AVOIDANCE AND MINIMIZATION

Based on the potential impact analysis to biological resources provided in Section 7.5, the following impact avoidance and minimization measures are provided as recommendations for implementation. The measures are distinguished as "Specific" and "General".

Specific measures are geared to address those potential impacts that have been identified as significant. Therefore, these measures entail strategies specifically designed to mitigate impacts to special status species and habitats to a less than significant level.

General measures consist of Best Management Practices (BMPs) directed to general resource protection issues. These are expected to be communicated to construction and operation crews to be utilized where applicable. These measures shall be identified prior to construction and shall be incorporated into construction and maintenance operations.

7.8.1 Specific Impact Avoidance and Minimization Measures

Measure 1: Pre-Construction Surveys and Construction Monitoring

Pre-construction biological clearance surveys shall be performed at specific construction and other work sites adjacent to the Proposed and Alternative Projects to minimize impacts on special status wildlife and plant species. If special status species are present, biological monitors will be on site, as needed, during project implementation in suitable habitat areas and shall aid crews in implementing avoidance measures during project construction. Since SCE will be enrolled in the MSHCP as a Participating Special Entity (PSE), impacts that cannot be adequately avoided will be compensated via the provisions of the MSHCP program. In the event that SCE enrollment in the MSHCP program is not feasible, SCE shall coordinate with the USFWS and the CDFW for further guidance as appropriate. It is recommended that potential significant findings identified during pre-construction surveys may be added to the Worker Environmental Awareness Program (WEAP) training..

Measure 2: Pre-construction Surveys for Nesting Birds

To minimize potential impacts to selected nesting special-status birds, including raptors, or other bird species protected under the provisions of the MBTA, planned vegetation clearing will take place during the non-breeding season (between September 1 and January 31) to the extent feasible. This will discourage the species from nesting within or in proximity to work areas. Existing trees, shrubs, or other vegetation that provide suitable structure for nesting would be removed. If vegetation clearing must take place during nesting season (February 1–August 31), a biologist shall conduct pre-construction nesting bird surveys prior to clearing for the sites that have potential to support nesting birds. If the biologist finds an active nest within or adjacent to the construction area and determines that there may be impacts to the nest, s/he will delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the type of construction activity. Construction activities approved by the biologist will take place within the buffer zone until the nest is vacated. If an active nest cannot be avoided by project activities, SCE shall either suspend work until nesting has been completed (to be determined by biologist) or coordinate with the CDFW and USFWS and obtain written authorization for moving the nest.

Measure 3: Stephen's Kangaroo Rat and Los Angeles Pocket Mouse

Protocol trapping surveys conducted for Stephen's kangaroo rat and Los Angeles pocket mouse have already yielded information about the presence, distribution, and suitable habitat for these species within or adjacent to the Proposed and Alternative Project survey areas. From the survey results, it is evident that these species have the potential to occur throughout the Proposed and Alternative Projects. Since the Valley South 115 kV Subtransmission Line Project is located within the Stephen's kangaroo rat fee area pursuant to the 1996 HCP, SCE shall address the compensation for Stephen's kangaroo rat impacts by paying the fee to County of Riverside (County of Riverside 1996). Regarding Los Angeles pocket mouse, SCE shall address potential impacts to this species via provisions of the MSCHCP SPE status. In addition, prior to construction, SCE shall conduct habitat assessments from vegetation, soil, and species sign (e.g., suitable burrows) clues for Stephen's kangaroo rat and Los Angeles pocket mouse at specific

work areas along the Proposed and Alternative Projects to aid in general impact avoidance and minimization. The surveys shall be conducted by a qualified biologist. In the event that SCE enrollment in the MSHCP program is not feasible, SCE shall coordinate with the USFWS and the CDFW for further guidance, as appropriate.

Measure 4: Riverside and Vernal Pool Fairy Shrimp

Focused surveys for the Riverside and Vernal Pool Fairy Shrimp are being conducted (wet season survey, 2012-13). As of this writing, four survey visits have not detected any listed fairy shrimp species. A dry season survey is also scheduled to be implemented in 2013, in accordance with USFWS protocols. As part of the surveys that have been conducted, potential habitat for these species has been identified and mapped. If listed Riverside or vernal pool fairy shrimp species are found, SCE shall address potential impacts to these species as a PSE under the provisions of the MSHCP. In addition, to aid in avoidance and minimization of impacts to these species, pre-construction marking of previously mapped pool sites will be performed by a qualified biologist and reflected in construction plans and specifications for avoidance. If no listed fairy shrimp species are found in this area from the remainder of the focused surveys, no additional action is warranted and no compensation for impacts to this species would need to be addressed.

Measure 5: Burrowing Owl

Focused surveys conducted along the Proposed and Alternative Projects have revealed and mapped active burrows and presence of nesting burrowing owls. Suitable habitat is present throughout the project site. Therefore, no more than 14 days prior to ground-disturbing activities, a take-avoidance burrowing owl survey will be conducted in appropriate habitat. Potential burrows that are identified and determined to be unoccupied outside of the nesting season would be collapsed to avoid construction impacts to the species during nesting season.

If nesting activity is present at an active burrow, the burrow shall be protected until nesting activity has ended. Nesting activity for burrowing owl in the region normally occurs between March and August. To protect the active burrow, the following restrictions to construction activities shall be required until the burrow is no longer active as determined by a biologist: (1) clearing limits shall be established within a 500-foot buffer around any active burrow, unless otherwise determined by a biologist and (2) access and surveying shall be restricted within 300 feet of any active burrow, unless otherwise determined by a biologist. Encroachment into the buffer area around the active burrow shall only be allowed if the biologist determines that the proposed activity will not disturb the nest occupants. Construction can proceed when the biologist has determined that fledglings have left the nest. If an active burrow is observed during the non-nesting season, the nest site will be monitored by a biologist and, when the owl is away from the nest, the biologist will either actively or passively relocate the burrowing owl. The biologist will then remove the burrow so the burrowing owl cannot return to the burrow.

SCE shall address potential unavoidable impacts to burrowing owl habitat via the provisions of the MSHCP, as a PSE. In the event that SCE enrollment in the MSHCP program is not feasible, SCE shall coordinate with the CDFW for further guidance as appropriate.

Measure 6: Coastal California Gnatcatcher

Focused survey for the California gnatcatcher in 2012 revealed nearly all areas of coastal sage scrub vegetation within 250 feet of the Proposed and Alternative Projects are occupied by this species. Suitable habitat occurs as small, disjunct areas along the Proposed Project and a large, contiguous area along the southern reaches of the Alternative Project. The strategy for achieving impact avoidance and minimization for gnatcatchers will involve avoidance of coastal sage scrub vegetation where project design allows. Additionally, avoidance of active nests will be accomplished through Measure 2, above. SCE will compensate for unavoidable loss of coastal sage scrub as a PSE under the provisions of the MSHCP. In the event that SCE enrollment in the MSHCP program is not feasible, SCE shall coordinate with the USFWS and CDFW for appropriate action.

Measure 7: Listed Riparian Birds

Vegetation survey of the Valley South 115 kV Subtransmission Line Project revealed very little riparian vegetation within 250 feet of the alignments. Focused survey of these riparian areas for listed bird species in 2012 detected only fleeting occurrence of least Bell's vireo and southwestern willow flycatcher, apparently attributable to transient migrants. SCE has committed to full avoidance of riparian and other wetland habitats from direct construction impacts. Furthermore, the unlikely possibility of indirect impacts to nesting pairs of these species in subsequent years will be addressed by Measure 2, above.

Measure 8: Quino Checkerspot Butterfly

Potentially suitable habitat for this species was detected and mapped within the Proposed and Alternative Project survey areas in 2012. As of this writing, a focused survey for this species has not yet been initiated due to seasonal timing. Much of the potential habitat coincides with the coastal sage scrub vegetation occupied by the California gnatcatcher, although some occurs in grassland. Avoidance of coastal sage scrub will provide a large measure of protection for potential areas of this species' occurrence, although direct and significant impacts are possible. These will be anticipated through the impending survey and the degree of risk assessed on the basis of presence or absence. This effort will also provide information to guide more refined physical avoidance measures. SCE shall address potential impacts to this species via its anticipated PSE status under the provisions of the MSCHCP. In the event that SCE enrollment in the MSHCP program is not feasible, SCE shall pursue appropriate actions through consultation with the USFWS and the CDFW.

7.8.2 General Impact Avoidance and Minimization Measures

In addition to species-specific avoidance and minimization measures, SCE will implement more general best management practices designed to minimize adverse effects to lands, waterways, and biological features.

- A WEAP and training will be implemented to increase understanding of environmental constraints and restrictions, introduce environmental monitors, identify contingent actions

for certain circumstances, and to establish lines of communication for resolution of unanticipated issues in the field.

- Vehicles and other equipment shall remain on established roadways or approved access routes or work areas. These shall be clearly marked.
- SCE will endeavor to contain artificial lighting at work sites to within a small radius of designated work areas should any night work be required. Fugitive light will not be allowed to extend significantly into surrounding natural habitats.
- Control of fugitive dust per standard measures will be implemented by SCE.
- SCE shall clean up and restore areas that will be temporarily disturbed by construction of the Proposed and/or Alternative Project to as close to pre-construction conditions as feasible or to the conditions agreed upon among landowners, SCE, and the appropriate agencies following the completion of construction.
- If restoration occurs within sensitive habitats, a habitat restoration and revegetation plan will be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

7.9 IMPACTS TO WILDLIFE MOVEMENT

The Proposed or Alternative Project is anticipated to occur in a landscape that is currently dedicated primarily to agricultural and passive preservation land uses and therefore relatively unconstrained in terms of wildlife movement. Although much of the surrounding area has been converted to agricultural uses, areas of dense human development and infrastructure are currently relative small and discontinuous. The mosaic of vegetation and habitats is generally conducive to migratory and dispersal movements by animals in that it presents few significant barriers and hazards. Major watercourses are not tightly constrained by human development, are generally allowed to flow on the surface (as opposed to being enclosed within culverts), and are intersected by relatively few major roadways. The most heavily traveled roadways in the local landscape, such as Highway 79 and Domenigoni Parkway, are relatively few and are only two to four lanes wide and generally free of peripheral barriers to wildlife movement, such as fences and walls. State Route 215, west of the Proposed Project, is a major freeway that likely constitutes a significant barrier and hazard to wildlife movement.

The southern portion of the Valley South 115 kV Subtransmission Line Project occurs within or adjacent to a biological core area recognized by the MSHCP. Constrained putative wildlife linkages are identified to the east and west in the plan, although the general rural development with patches of native vegetation, including drainages, to the north likely also supports animal movement. Biological connectivity to the east, albeit fragmented in places, leads to extensive wildlands in the foothills and mountains of the San Jacinto Range.

Two disjunct, outlying material staging yards northwest of the Valley Substation occur in rural developed areas and present no impediment to wildlife movement.

The majority of the Proposed Project route follows Leon Road, a moderately traveled, primarily two-lane, north-south roadway that even currently presents a varying degree of obstruction to east-west wildlife movement. The current level of obstruction will be somewhat exacerbated for animals such as mammals and reptiles by construction of the Proposed Project. Landscape movement by birds will be unaffected by construction impacts. However, Proposed Project work will remain fairly concentrated and non-continuous, allowing movement of animals between concentrated work areas. Furthermore, most animal dispersal occurs at night and active construction will occur during the day facilitating avoidance. Construction phase impacts are anticipated to be less than significant in this regard. Post-construction operation of the subtransmsission line will not result in impediments to wildlife movement above current levels.

The northern east – west section of the Alternative Project follows Scott Road, a relatively busily traveled arterial in the local landscape. Since this road is currently bordered on both sides by intensive agriculture and a mix of rural and dense suburban development, little north – south wildlife movement likely occurs across it. By contrast, the north – south and southern east – west sections of the Alternative Project route follow either very infrequently traveled, unpaved roads or narrow utility access routes not used for public transportation. Current impediments to wildlife movement by these access routes may be interpreted as negligible. Therefore, construction phase activities will likely result in significant, but temporary and localized increases in local disturbance that may impede local wildlife movement at times. However, Proposed Project work will remain fairly concentrated and non-continuous, allowing movement of animals between concentrated work areas, especially at night, when most animal dispersal occurs. Long-term construction impacts to animal movement are expected to be less than significant if proper site management Best Management Practices (BMPs) regarding equipment staging, times of activity, and night-lighting are observed. Post-construction operation of the subtransmsission line will not result in impediments to wildlife movement above current levels.

7.10 IMPACTS TO CRITICAL HABITAT

Among the four species for which federally designated Critical Habitat occurs within or near the Valley South 115 kV Subtransmission Line Project survey area (see section 6.1.2), the Critical Habitat area for Munz's onion occurs east of the western section of the Alternative Project, but beyond the 500-foot survey buffer and 150-foot impact corridor. A small area of Critical Habitat for spreading Navarretia occurs in a disturbed wetland basin ("San Diego Mesa Claypan Vernal Pool" in Table 1 and Figure 12) at the northwestern angle of the Alternative Project (northeast of the intersection of Scott and Menifee Roads). However, the 2012 rare plant survey did not detect this species. Furthermore, examination of the site in early 2013 revealed that it had been disked since summer of 2012 by the local land owner or municipality and likely no longer provides suitable conditions for this species.

Critical Habitat designations for Quino checkerspot and California gnatcatcher are much more extensive than those for the two plant species (see Figure 10). Critical Habitat for the former species occurs only along the Alternative Project, whereas that for the latter species occurs along both alignments. These areas have been identified on a large scale and on the somewhat arbitrary basis of units of the Public Land Survey (Township-Range) system, therefore including many landscape elements not suitable for their respective species. To adequately address the

question of impact to actual habitat for checkerspots and gnatcatchers on the local scale, detailed identification and mapping of suitable habitat "constituent elements" combined with focused surveys were conducted.

Potential areas for occurrence of Quino checkerspot were thus identified during 2012 vegetation mapping (see Figure 6), although actual survey has yet to occur until spring of 2013 due to seasonal timing. Initial habitat assessment for this species indicates that approximately 80 acres of coastal sage scrub and grassland possess the constituent elements of suitable open, relatively undisturbed vegetation structure and/or presence of larval host plant species. The assessment of suitability of these areas will be refined through the survey process. Descriptions of and potential impacts to these areas, as well as measures to avoid or minimize impacts are addressed in preceding sub-sections of section 7 of this document.

The correspondence between designated Critical Habitat and occurrences documented by survey for the California gnatcatcher is fairly good (compare Figures 10 and 15). It may therefore be concluded that the habitat mapping and survey for this species reported herein represents an accurate refinement and presentation of habitat constituent elements within the Proposed and Alternative Project survey areas. Approximately 83 acres of coastal sage scrub sub-types with suitable structural characteristics to support this species were documented and evaluated. Descriptions of and potential impacts to these areas, as well as measures to avoid or minimize impacts are addressed in preceding sub-sections of section 7 of this document.

7.11 SUMMARY OF IMPACT SIGNIFICANCE

Post-construction project operation is expected to occupy approximately 13.9 acres, or four percent of the impact corridor for the Proposed Project. A similar proportion is anticipated for the Alternative Project. Regular operation of the subtransmission line is expected to be infrequent and require mostly localized activities not to extend beyond established access and work areas around each structure. Nevertheless, certain infrequent operations and maintenance (O&M) activities may generate high levels of non-continuous noise that may adversely affect certain wildlife during the reproductive season. Routine operational impacts would be less than significant. Access routes, tower pads, etc. will be properly designed and maintained to prevent discharge of soil into wetlands or substantially alter local hydrology. Such measures are expected to ensure that subtransmission line operation effects will be reduced below the level of significance.

The 150-foot impact corridor for the Proposed Project includes only 3.19 acres of riparian and wetland vegetation (one percent of the corridor) and only 4.59 acres of coastal sage scrub (1.5 percent of the corridor). Both of these habitats are occupied by listed, covered, or otherwise special status plant and animal species. Temporary and permanent construction activities from the Proposed Project will account for about 49 percent of the impact corridor. Therefore, SCE has committed to complete avoidance of such sensitive vegetation / habitat by perimeter marking and careful siting of structures and work areas.

The corresponding figures for the entire Alternative Project are 3.9 acres of riparian / wetland (1.2 percent of the corridor) and 23.18 acres of coastal sage and related scrub types (7.4 percent of the corridor). No comparable engineering impact data are yet available.

The Proposed and Alternative Projects intersect 16 jurisdictional wetland / water features, which collectively comprise about 16 acres within the 500-foot survey buffer (see Tables 2 through 4). A smaller collective wetland area occurs within the 150-foot impact corridors. Temporary and permanent construction activities have the potential to either damage such features directly through grading or equipment movement or indirectly through soil discharge and/or altered hydrology. However, since impacts will occur to about 49 percent of the impact corridor and the generally low-gradient topography of the Proposed and Alternative Projects is expected to require minimal earth-moving, it is expected that direct and indirect impacts to these highly localized features can be avoided by perimeter marking, careful siting of structures and work areas, and appropriate water use and soil movement measures.

Movement by birds is likely to be unaffected by temporary and permanent construction impacts. The impediment to landscape movement imposed by some existing roadways will be somewhat exacerbated during construction for animals such as mammals and reptiles by the Proposed or Alternative Project. However, Project work will remain fairly concentrated and non-continuous, allowing movement of animals between concentrated work areas. Furthermore, most animal dispersal occurs at night and active construction will occur during the day, facilitating avoidance. O&M impacts would be less than significant to wildlife movement, as no impediment to such movement is expected above current levels from the final project configuration. Operational impacts would be less than significant. Furthermore, the Valley South 115 kV Subtransmission Line Project will not contribute to fragmentation of existing habitat areas so as to increase deleterious edge effects.

In terms of individual special status species or groups of such species, effects of the Proposed or Alternative Project construction will be differential, by habitat type. Whereas a high degree of certainty surrounds the avoidance of localized, sensitive habitats such as coastal sage scrub or riparian, concentration of construction and operational activities will necessarily occur in more open vegetation types, such as non-native grassland and ruderal, thus increasing the likelihood of significant impacts to certain species, such as Stephen's kangaroo rat, smooth tarplant, burrowing owl, foraging raptors, orange-throated whiptail, and possibly Quino checkerspot and fairy shrimp. These species will require relatively more scrutiny in the context of measures described in section 7.8.1.

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Appendix A:
Jurisdictional Waters and Wetlands Delineation Report

Jurisdictional Waters and Wetlands Delineation

Southern California Edison

Valley South Subtransmission Project

Riverside, California

USGS Bachelor Mountain, Murrieta, Romoland, and Winchester Quadrangles

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Acronyms List

ACOE	United States Army Corps of Engineers
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFG	California Fish and Game Code
CFR	Code of Federal Register
CWA	Clean Water Act
Dv	Domino silt loam, saline-alkali
Dw	Domino silt loam, strongly saline-alkali
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
FT	Federally Threatened
GIS	Geographic Information Systems
GPS	Global Positioning System
kV	kilovolt
Manual	1987 Wetland Delineation Manual
msl	Mean Sea Level
NRCS	National Resource Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate wetland vegetation
OHWM	Ordinary High Water Mark
Proposed Project	Proposed and Alternative Route of the Valley South Subtransmission Line Project
Rapanos	*Rapanos v. United States and Carabell v. United States*
RPW	Relatively Permanent Waters

RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SWANCC	*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, et. al.*
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Waters
TRC	TRC Solutions, Inc.
UPL	Upland vegetation
U.S.	United States
USEPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements
YbC	Yokohl loam, 2 to 8 percent slopes

1.0 INTRODUCTION

On behalf of Southern California Edison (SCE), TRC Solutions, Inc. (TRC) conducted a delineation of jurisdictional waters and wetlands for the Preferred (Alternative 1) and Alternative 2 Routes of the Valley South Subtransmission Project (Proposed Project), located in Riverside County, California (Figure 1, *Vicinity Map*). The delineation included a review of United States Geological Survey (USGS) topographic maps, aerial imagery, and the National Wetlands Inventory (NWI), in addition to field surveys.

This report summarizes our methodology and findings of jurisdictional waters and wetlands as regulated by the United States Army Corps of Engineers (ACOE), Regional Water Quality Board (RWQCB), and California Department of Fish and Game (CDFG) for the above-referenced Proposed Project. These findings are subject to confirmation by the regulatory agencies. [1]

1.1 PROJECT OVERVIEW

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of southern Riverside County including the cities of Murrieta, Menifee, Temecula, Wildomar, and the surrounding unincorporated communities within the county. The following briefly describes the components included in the Proposed Project:

- Construction of a new 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115 kV Substation in the city of Murrieta and terminating near SCE's existing Auld 115/12 kV Substation in the city of Menifee. The proposed Valley South Subtransmission Line would be approximately 12 miles in length. The alternative Valley South Subtransmission Line would be approximately 14 miles.
- Installation of new fiber optic cable and communication equipment to connect the Proposed Project to SCE's existing telecommunication system.
- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

1.2 REGULATORY BACKGROUND

Jurisdictional limits among the agencies (ACOE, RWQCB, and CDFG) vary due to the different governing documents that define their limits of jurisdiction. The following is a summary of the governing documents as they pertain to the limits of jurisdiction.

[1]Only the regulatory agencies can make a final determination of jurisdictional boundaries. If an ApprovedJurisdictional Determination is required, TRC can assist in getting written confirmation of jurisdictional boundaries from the agencies. Typically, only the ACOE will provide written confirmation.

1.2.1 United States Army Corps of Engineers

The ACOE administers and enforces Section 404 of the Clean Water Act (CWA). Pursuant to Section 404 of the CWA, the ACOE regulates the discharge of dredged and/or fill material into waters of the United States (U.S.). The term "waters of the U.S." is defined in ACOE regulations at 33 Code of Federal Register (CFR) Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
>
> *(2) All interstate waters including interstate wetlands;*
>
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
>
> *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
>
> *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
>
> *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*
>
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
>
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
>
> *(6) The territorial seas;*
>
> *(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
>
> *(8) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.*
>
> (9) *Waters of the United States do not include prior converted cropland.*[2] *Notwithstanding, the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water*

[2] The term "prior converted cropland" is defined in the ACOE Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season…." [Emphasis added.]

> *Act, the final authority regarding Clean Water Act jurisdiction remains with the Environmental Protection Agency (USEPA).*

In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the Ordinary High Water Mark (OHWM) which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

Non-wetland waters are classified as either ephemeral, intermittent, or perennial waters as defined in the January 15, 2002 Federal Register notice:

Ephemeral Stream – An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Intermittent Stream – An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Perennial Stream – A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

1.2.1.1 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et. al.

The definition of "waters of the U.S." was altered by the January 9, 2001 U.S. Supreme Court Decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, et. al.* (SWANCC). In the SWANCC decision, the Supreme Court held that the ACOE exceeded its authority by asserting CWA jurisdiction over an abandoned sand and gravel pit, solely because it provided habitat for migratory birds. The SWANCC rule is limited to waters that are non-navigable, isolated and intrastate and clarified that the ACOE staff should no longer rely on the use of waters by migratory birds as the sole basis for asserting jurisdiction.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the ACOE interpreted the interstate commerce requirement in a manner that restricted ACOE jurisdiction on isolated (intrastate) waters. On September 12, 1985, the USEPA asserted that ACOE jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the U.S." in ACOE regulations was modified as quoted above from 33 CFR 328.3(a).

In the SWANCC case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the CWA. The written opinion notes that the Court's previous support of the ACOE's expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc*.) was for a wetland that abutted a navigable water and that the Court did not express any opinion on the question of the authority of the ACOE to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the ACOE extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, the Court's opinion may go beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the CWA (regardless of any interstate commerce connection). However, the ACOE and USEPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

1.2.1.2 Rapanos v. United States and Carabell v. United States

On June 5, 2007, the USEPA and ACOE issued joint guidance (USEPA, 2008) that addresses the scope of jurisdiction pursuant to the CWA in light of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Rapanos). For project sites that include waters other than Traditional Navigable Waters (TNW) and/or their adjacent wetlands, or Relatively Permanent Waters (RPW) tributary to TNW and/or their adjacent wetlands, the ACOE must apply the significant nexus standard that is outlined in the *Approved Jurisdictional Determination Form* (ACOE, 2008a). For "isolated" waters or wetlands, the joint guidance also requires an evaluation by the ACOE and USEPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision, are associated with isolated features on project sites for which a jurisdictional determination is being sought from the ACOE.

The agencies will assert jurisdiction over the following waters (USEPA, 2008):

- TNWs;
- Wetlands adjacent to TNWs;
- Non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not RPW;
- Wetlands adjacent to non-navigable tributaries that are not RPW; and
- Wetlands adjacent to but that does not directly abut a RPW non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream TNWs; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

1.2.1.3 Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the U.S.”) is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the ACOE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual (Manual) (ACOE, 1987) and the Arid West Supplement (ACOE, 2008a) generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics, often referred to as a “three-parameter wetland.”

While the Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands (Reed, 1988);
- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- Indicators of wetland hydrology must be present, such as soil saturation. Whereas the Manual requires that hydrologic characteristics indicate that the ground is saturated to

within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation," which require a minimum of 14 days of ponding to be considered a wetland.

1.2.2 Regional Water Quality Control Board

Pursuant to Section 401 of the CWA, the RWQCB regulates "waters of the U.S." with similar jurisdiction as the ACOE. The RWQCB focuses on the effects of a project on downstream water quality conditions and beneficial uses. In contrast to the ACOE, the RWQCB may assess jurisdiction over isolated features pursuant to the Porter-Cologne Water Quality Act. To obtain a Section 401 Water Quality Certification, the project must be in compliance with the California Environmental Quality Act (CEQA).

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board (SWRCB) issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program (Wilson, 2001). The memorandum states:

> *California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the ACOE, or another application for a federal license or permit. Thus if the ACOE determines that the water body in question is not subject to regulation under the ACOE's 404 program, for instance, no application for 401 certification will be required…*
>
> *The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states….*
>
> *Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the ACOE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing waste discharge requirements (WDRs) in the absence of a request for 401 certification.…*

In this memorandum the SWRCB's Chief Counsel has made the clear assumption that fill material to be discharged into isolated "waters of the U.S." is to be considered equivalent to "waste" and therefore subject to the authority of the Porter-Cologne Water Quality Act. However, while providing a recounting of the Porter-Cologne Water Quality Act's definition of "waters of the U.S.," this memorandum fails to also reference the Porter-Cologne Water Quality Act's own definition of waste:

> *"Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.* (California Resources Agency, 1969)

The lack of inclusion of a reference to "fill material," "dirt," "earth" or other similar terms in the Act's definition of "waste," or elsewhere in the Porter-Cologne Water Quality Act, suggests that no such association was intended. Thus, the Chief Counsel's memorandum signals that the SWRCB is attempting to retain jurisdiction over discharge of fill material into isolated "waters of the U.S." by administratively expanding the definition of "waste" to include "fill material" without actually seeking amendment of the Porter-Cologne Water Quality Act's definition of waste (an amendment would require action by the state legislature). Consequently, discharge of fill material into "waters of the State" not subject to the jurisdiction of the ACOE pursuant to Section 404 of the CWA may require authorization pursuant to the Porter Cologne Water Quality Act through application for WDRs or through waiver of WDRs, despite the lack of a clear regulatory imperative.

1.2.3 California Department of Fish and Game

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game (CFG) Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG's Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by (CDFG) as natural waterways.

- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

Thus, the types of water features that CDFG asserts jurisdiction on closely mirror those of the ACOE. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status. However, the limits of jurisdiction can differ between the ACOE and CDFG in non-tidal waters depending on the physical characteristics. While the ACOE asserts jurisdiction over the OHWM, which is typically limited to the bed and lower banks of a drainage feature for example, CDFG asserts jurisdiction over the bed and bank and any associated vegetation. This includes to the top of bank and can extend outside the top of bank to the drip line of associated riparian vegetation.

2.0 METHODS

Prior to beginning the field delineation, a 1:2400 scale color aerial photograph, the U.S. Fish and Wildlife Service (USFWS) NWI (USFWS, 2011), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil mapping data (NRCS, 2012), historic aerials (Google, 2012), and the USGS Bachelor Mountain, Murrieta, Romoland, and Winchester topographic maps (USGS, 1973, 1979a, 1979b and 1979c) were examined to determine the locations of potential areas of jurisdiction.

TRC biologists Travis Kegel and Karyn Sernka conducted field work for the delineation in April 2012. An assistant was also present to assist during the fieldwork. The delineation field work involved walking the entire Proposed Project survey area, focusing on (but not limited to) potential areas identified during the literature search, and physically identifying any hydrologic, vegetative, and geomorphic characteristics in order to delineate potentially jurisdictional waters and wetlands. The Proposed Project survey area is defined as the area covering both portions of the Preferred and Alternative 2 alignments (for a length of approximately 18 miles) and a width of 500 feet (250 feet on either side of the alignments). Limits of the Proposed Project survey area are reflected on Figure 1, *Vicinity Map*. While in the field, notes were taken documenting the characteristics of wetland and water features, and their limits were recorded onto a 1:2400 scale color aerial photograph using visible landmarks and/or were mapped with a Trimble Global Positioning System (GPS) hand-held unit. Field data were digitized using Geographic Information Systems (GIS) to determine acreages. A detailed delineation map was prepared illustrating the features that intersect the Proposed Project.

The field survey was conducted according to the technical guidelines provided in the Manual and the Arid West Supplement to identify and delineate wetlands that may be subject to regulatory jurisdiction under Section 404 of the CWA. Wetlands were identified by the “three-factor” approach, in which criteria for wetland hydrology, hydrophytic vegetation, and hydric soils must all be met to conclude that an area is a wetland, as described in the Manual and summarized below. Wetlands that appeared to meet the ACOE criteria were considered potentially jurisdictional (since any determination is subject to verification by the regulatory agencies).

- Vegetation: Plant species were identified in the field and the indicator status of dominant plants was determined using The National List of Plant Species that Occur in Wetlands: Region 0 – California (Reed, 1988). Plant species were classified as obligate wetland vegetation (OBL) with greater than 99% probability of occurring in wetlands; facultative wetland (FACW) with 67% to 99% probability of occurring in wetlands; facultative (FAC) with 33% to 67% probability of occurring in wetlands; facultative upland (FACU) with 1% to 33% probability of occurring in wetlands; or upland vegetation (UPL) with less than 1% probability of occurring in wetlands.
- Hydrology: The presence of primary wetland hydrology indicators was determined by observing inundation, saturation, water marks, sediment deposits, drainage patterns, and/or drift lines. Soil pits were dug to a depth of 18 inches, or until refusal, using a sharpshooter shovel, and allowed to stand undisturbed for at least 10 minutes. Observations were then recorded as to depth of free water in the pit, and depth of saturated soil.
- Soil: Soil profiles were examined for color and texture. Soil color was determined using a Munsell Soil Color Chart and hydric soil characteristics were identified (i.e., sulfidic odor, low chroma colors, mottling, etc.). All soil profile data were recorded onto the required data forms.

"Waters of the U.S." were identified pursuant to criteria outlined in Sections 401 and 404 of the CWA, including but not limited to the presence of an OHWM and connection to a downstream jurisdictional water body. The OHWM was determined pursuant to the *Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (ACOE, 2008b) by observing signs of flow including but not limited to shelving, drift lines, and disturbed vegetation. "Waters of the State" were identified pursuant to criteria outlined in Section 1600 of the CFG Code, including the presence of a defined bed and bank and any associated vegetation. Drainages that appeared to meet the criteria for "waters of the U.S." or "waters of the State" were considered potentially jurisdictional as any determination is subject to verification by the regulatory agencies.

3.0 RESULTS

3.1 TOPOGRAPHY AND HYDROLOGY

The Proposed Project survey area comprises approximately 1,065 acres and contains named blue-line drainages (two in total), as depicted on the USGS topographic maps (Figure 1). The named drainages include the Domenigoni Channel and Warm Springs Creek, in addition to unnamed intermittent drainages. Elevation within the Proposed Project survey corridor ranges from approximately 1,300 to 1,530 feet above mean sea level (msl).

The Proposed Project survey area transects a mixture of habitats and land uses including agricultural and developed areas where local hydrology and drainage patterns have been significantly altered, along with undeveloped land consisting of rough foothills and low-gradient rolling hills. The undeveloped areas are composed primarily of ruderal, non-native grassland, and coastal sage scrub vegetation bordered by residential and agricultural land uses. Surface

water runoff within the Proposed Project survey area appears to be captured by perennial drainages and underground storm water systems associated with the urban developments.

3.2 LAND USE

Land use within the Proposed Project survey area consists primarily of agricultural land, with undeveloped land, residential communities, and natural areas composing the rest of the areas. Outside of the agricultural and developed areas, ruderal and non-native grassland habitat dominates the terrain.

3.3 SOILS

The NRCS has mapped 27 soil series as occurring within the Proposed Project survey area. Of those, the NRCS has mapped the Domino and Yokohl soil series as potentially hydric soil series. A complete list of soil types found within the Proposed Project survey corridor and their designations in included in Appendix A, *Soil Types*. The Domino and Yokohl soil series are described in more detail below.

3.3.1 Domino Series

Two soil types within the Domino soil series have been categorized by the NRCS as being potentially hydric. Specifically the NRCS identifies Domino silt loam, saline-alkali (Dv) and Domino silt loam, strongly saline-alkali (Dw) as being potentially hydric. The soils of the Domino Series are very deep, poorly to very poorly drained alkali soils formed in alluvium from mixed rock sources. Domino soils occur in basins and have slope from 0 to 2 percent. The soils of the Domino Series are used for growing rice, sugar beets, and safflower. Original vegetation was saline-alkali tolerant plants including many rare plants in the Western Riverside region.

3.3.2 Yokohl Series

One soil type within the Yokohl soil series has been categorized by the NRCS as being potentially hydric. Specifically, the NRCS identifies Yokohl loam, 2 to 8 percent slopes (YbC) as being potentially hydric. The soils of the Yokohl Series are shallow (10-20 inches), well drained non-saline soils formed in alluvium from igneous sources. Yokohl soils occur in depressions and have a slope of 2 to 8 percent. The soils of the Yokohl series are not generally used for agriculture.

The soil series Domino (Dv and Dw) and Yokohl (YbC) are identified as potentially hydric in the local hydric soils NRCS list for the Western Riverside Area. It is important to note that under the Arid West Supplement, the presence of mapped hydric soils is no longer dispositive for the presence of hydric soils. Rather, the presence of hydric soils must now be confirmed in the field.

3.4 AREAS OF POTENTIAL JURISDICTION

The Proposed Project survey area supports fifteen features that are potentially subject to jurisdiction under the ACOE, RWQCB, and/or CDFG. The location and limits of the ACOE and RWQCB jurisdictional areas are depicted on Figure 2, *ACOE and RWQCB Jurisdiction, Sheets*

1-15. The location and limits of the CDFG jurisdictional areas are depicted on Figure 3, *CDFG Jurisdiction, Sheets 1-15*. Representative site photographs are provided as Appendix B, *Site Photographs*, and data forms are provided as Appendix C, *Wetland Determination Data Forms*. A description of each feature is provided below.

3.4.1 Feature 1

Feature 1 is an ephemeral drainage located in an active agricultural field that traverses the Proposed Project survey area from northeast to southwest. The feature did not appear to have a connection to downstream jurisdictional waters. Based on a review of the surrounding area, it is believed that the feature dissipates into nearby agricultural lands. Results of the survey have been mapped on Figures 2 and 3, Sheet 1. Due to a lack of downstream connection, Feature 1 is not expected to fall under the jurisdiction of the ACOE. The RWQCB jurisdiction associated with Feature 1 within the Proposed Project survey area totals 0.38 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 1 totals 0.38 acre, none of which is riparian.

Vegetation associated with Feature 1 is composed primarily of escaped agricultural cultivars with few non-native and disturbance-associated species. Dominant species included wheat (*Triticum aestivum*), with minor ruderal components including cocklebur (*Xanthium strumarium*), bindweed (*Convolvulus arvensis*), stinknet (*Oncosiphon piluliferum*) and various non-native bromes (*Bromus* sp.). At no point was there a dominance of hydrophytes associated with the feature. A photograph of Feature 1 is included in Appendix B, Photo 1.

No soil pits were excavated due to a lack of hydrophytic vegetation. Superficially, soils within the feature consisted of sandy loose soil consistent with active tilling and agricultural use.

3.4.2 Feature 2

Feature 2 is a flood control basin constructed in the 2004-2005 time period (Google, 2012) and outflow drainage. The feature is located north of the intersection of Matthews Road and Briggs Road in unincorporated Riverside County. The flood control basin was dry at the time of the survey, but is expected to receive nuisance flows from the nearby residential community and future planned communities. The outflow channel is an ephemeral drainage that traverses the Proposed Project survey corridor from north to south, sheet-flowing across Matthews Road and eventually dissipating into an agricultural field and non-jurisdictional swale. There are no culverts associated with the Matthews Road crossing. Results of the survey have been mapped on Figures 2 and 3, Sheets 2 and 3. Due to a lack of downstream connection, Feature 2 is not expected to fall under the jurisdiction of the ACOE. The RWQCB jurisdiction associated with Feature 2 within the Proposed Project survey area totals 0.68 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 2 totals 0.95 acre, of which 0.32 acre is riparian.

Vegetation associated with the flood control basin included upland ruderal vegetation as well as hydrophytic vegetation associated with the basin's low flow area. Ruderal vegetation associated with the basin included stinknet, non-native bromes, and mustards (*Sisymbrium altissimum*, *Brassica rapa*, and/or *Hirschfeldia incana*). Vegetation associated with the basin's low flow area included cattails (*Typha* sp.), rabbit's foot grass (*Polypogon monspeliensis*), and a young

willow (*Salix* sp.). It is assumed that that the basin is regularly maintained due to the short stature of the willow and cattails. A photograph of the flood control basin portion of Feature 2 is included as Appendix B, Photo 2.

Vegetation associated with the outfall drainage varied depending on its location within areas with historic hydrology and areas recently constructed. The channel closest to the basin appears to have been constructed at the same time as the flood control basin. Further downstream, near Matthews Road, the drainage is connected to areas with historical hydrology. Vegetation near the flood control basin consisted of upland ruderal species dominated by stinknet, non-native bromes, and mustards with minor components including rabbit's foot grass. Vegetation near Matthews Road was composed of mulefat scrub, dominated exclusively by large mulefat (*Baccharis salicifolia*) with minor components including rabbit's foot grass and Fremont cottonwood (*Populus fremontii*). Photographs of the upper and lower portions of the outfall drainage are included as Appendix B, Photos 3 and 4.

A soil pit was excavated in Feature 2 within the outfall drainage. No wetland soils were observed. Soils near the flood control basin were comprised of hard clays consistent with recent excavation. Soils near Matthews Road consisted of deep sands. The result of the data pit is recorded in Appendix C (Sampling Point 1).

3.4.3 Domenigoni Channel

The Domenigoni Channel is a wide, soft-bottom trapezoidal flood control channel located approximately 1,350 feet north of the intersection Domenigoni Parkway and Leon Road near the city of Winchester. The channel is bisected by Leon Road, with the road running through the channel. There are no culverts associated with the Leon Road crossing. The channel traverses the Proposed Project survey area from east to west, taking flood waters from Diamond Valley Lake to Canyon Lake, which ultimately connects to the Pacific Ocean, the closest TNW. The active low flow was flowing at the time of the survey and therefore the channel is believed to be a perennial drainage. The active low flow had either saturation within one inch of the surface or had flowing surface water and is loosely defined as the center of the channel with an approximate 150 foot width. Results of the survey have been mapped on Figures 2 and 3, Sheet 4. ACOE jurisdiction associated with the channel is 4.30 acres, all of which is wetland. The RWQCB jurisdiction associated with the channel within the Proposed Project survey area totals 4.30 acre, all of which is wetland. The CDFG jurisdiction associated with Domenigoni Channel totals 4.30 acre, all of which is riparian.

The Domenigoni Channel is a maintained flood control channel dominated by wetland and hydrophytic vegetation. Dominant species included brass buttons (*Cotula coronopifolia*), various flat sedges (*Cyperus sp.*), cattails, bulrush (*Scirpus* sp.), saltgrass (*Distichlis spicata*), and alkali heliotrope (*Heliotropium curassavicum*). A photograph of this tributary is included as Appendix B, Photo 5.

Wetland soils were identified within the channel. Soils consisted of sandy loams and contained mottles and gleyed streaking. The result of the data pit is recorded in Appendix C (Sampling Point 2).

3.4.4 Feature 3

Feature 3 consists of agricultural ditches and stock ponds located near the intersection of Holland Road and Leon Road in unincorporated Riverside County. The ditches and stock ponds do not have a downstream connection to other jurisdictional waters. The features are bisected by Leon Road, with water agricultural ditches to the east connecting to the western stock ponds via a 12 inch pipe culvert. Results of the survey have been mapped on Figures 2 and 3, Sheet 5. Due to a lack of downstream connection with a TNW, Feature 3 is not expected to fall under the jurisdiction of the ACOE. The RWQCB jurisdiction associated with Feature 3 within the Proposed Project survey area totals 0.11 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 3 totals 0.11 acre, none which is riparian.

Vegetation associated with Feature 3 is dominated by disturbance associated species. Dominant species included various eucalyptus (*Eucalyptus* sp.), and various mustards with minor components including curly dock (*Rumex crispus*), saltgrass, and rabbit's foot grass. Photographs of Feature 3 are included as Appendix B, Photos 6 and 7.

No soil pits were excavated in Feature 3 due to a lack of dominant hydrophytes.

3.4.5 Feature 4

Feature 4 is a small ephemeral drainage located at the edge of a fallow field near the intersection of Scott Road and Leon Road in unincorporated Riverside County. There are three road crossings associated with the feature, two crossing of Leon Road via 12 inch pipe culverts and then crossing a single across Scott Road via a 24 inch pipe culvert. The feature traverses the Proposed Project survey corridor from east to southwest, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 6. ACOE jurisdiction associated with the drainage is 0.04 acres, none of which is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey corridor totals 0.04 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 4 totals 0.04 acre, none of which is riparian.

Feature 4 is dominated by ruderal vegetation. Dominant vegetation consisted of various mustards, filaree (*Erodium* sp.) and Italian rye grass (*Lolium multiflorum*). Minor components in the ruderal vegetation included alkali mallow (*Malvella leprosa*), alkali heliotrope and fine leaved tansy mustard (*Descurainia sophia*). A photograph of this drainage is included as Appendix B, Photo 8.

No wetland soils were identified within the drainage. No soil pits were excavated, due to an absence of hydrophytic vegetation.

3.4.6 Feature 5

Feature 5 is a large perennial drainage and wetland associated with the French Valley area. The drainage is located north of the intersection of Thompson Road and Winchester Road. The drainage is bisected by Old Leon Road with the portion to the east connecting to the western portion via four 36 inch pipe culverts. The drainage traverses the Proposed Project survey

corridor from northeast to southwest, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 7. ACOE jurisdiction associated with the drainage is 4.36 acres, all of which is wetland. The RWQCB jurisdiction associated with the channel within the Proposed Project survey area totals 4.36 acres, all of which is wetland. The CDFG jurisdiction associated with the drainage totals 4.36 acres acre, all of which is riparian.

Feature 5 is dominated by wetland and hydrophytic vegetation. To the east of Old Leon Road, the vegetation is dominated by cattails and California bulrush (*Scirpus californicus*). Minor components included alkali mallow, alkali heath (*Frankenia salina*), alkali heliotrope, and saltgrass. To the west of Old Leon Road, the vegetation is still dominated by hydrophytes but more with weedy components. To the west of Old Leon Road the vegetation is dominated by arroyo willow (*Salix lasiolepis*) and cattails with minor components including saltgrass, ragweed (*Ambrosia psilostachya*), curly dock, and short-pod mustard (*Hirschfeldia incana*). Photographs of this drainage are included as Appendix B, Photos 9 and 10.

Wetland soils were identified within the drainage on both sides of Leon Road. Soils consisted of loams and loamy clays. The results of the data pits are recorded in Appendix C (Sampling Points 3 and 4).

3.4.7 Feature 6

Feature 6 is a six-foot-wide concrete lined v-ditch located south of the intersection of Thompson Road and Winchester Road. The v-ditch was wet at the time of the survey and appears to be fed by nuisance flows from a residential community east of the survey area. The v-ditch is expected to have intermittent flow. Flows from the ditch enter a culvert with the flow path assumedly paralleling Winchester Road southwest. The v-ditch traverses the Proposed Project survey area from east to west, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 8. ACOE jurisdiction associated with the v-ditch is 0.01 acres, none of which is wetland. The RWQCB jurisdiction associated with the v-ditch within the Proposed Project survey area totals 0.01 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 6 totals 0.01 acre, none of which is riparian.

Very few plants were located in the v-ditch due to a lack of soils. Vegetation present was primarily ruderal in nature. Dominant vegetation included red brome (*Bromus rubens*) and Russian thistle (*Salsola tragus*). A photograph of this drainage is included as Appendix B, Photo 11.

No data pits were excavated due to a lack of soils associated with Feature 6. Only thin patchy soils from sedimentation were present in the v-ditch. No wetland soils were present.

3.4.8 Feature 7

Feature 7 is a perennial drainage and wetland located approximately 800 feet south of the intersection of Thompson Road and Winchester Road. The drainage was wet at the time of the

survey and appears to be fed by nuisance flows from a residential community east of the survey area. The drainage is bisected by Old Leon Road with flow traveling under the road via a 24 inch pipe culvert. The drainage traverses the Proposed Project survey area from east to west, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 8. ACOE jurisdiction associated with the drainage is 0.10 acre, all of which is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.10 acre, all of which is wetland. The CDFG jurisdiction associated with Feature 7 totals 0.31 acre, of which is 0.29 acre is riparian.

Feature 7 is dominated by wetland and hydrophytic vegetation. Vegetation is dominated by arroyo willow, tamarisk (*Tamarix parviflora*), and cattails with minor components including watercress (*Rorippa nasturtium-aquaticum*), bulrush and willowherb (*Epilobium ciliatum*). A photograph of this drainage is included as Appendix B, Photo 12.

Wetland soils were identified within the drainage. Soils consisted of loams and loamy clays. The results of the data pits are recorded in Appendix C (Sampling Points 5 and 6).

3.4.9 Feature 8

Feature 8 is a flood control basin and inflow and outfall channel. The feature is located approximately 1,040 feet north of the intersection of Benton Road and Old Leon Road in unincorporated Riverside County. The flood control basin was wet at the time of the survey and receives nuisance flows from the nearby residential community. The inflow channel is an ephemeral drainage that flows east to west into the flood control basin. The inflow channel is bisected by Old Leon Road with flow traveling west under the road via a 36 inch pipe culvert. The outflow channel is bisected by a dirt road and berm with flow travelling north under the road via a 24 inch pipe culvert. The outfall channel is an ephemeral drainage that flows from the flood control basin north and out of the Proposed Project survey area and eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 8. ACOE jurisdiction associated with the drainage is 0.76 acre, of which 0.36 acre is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.76 acre, of which 0.36 acre is wetland. The CDFG jurisdiction associated with Feature 8 totals 0.77 acre, of which is 0.73 acre is riparian.

Vegetation associated with the flood control basin was dominated by hydrophytes including cattails, Fremont cottonwood, black willow (*Salix goodingii*), tamarisk, and pale spike-rush (*Eleocharis palustris*) with minor components including bulrush, willowherb, and rabbit's foot grass. A photograph of the flood control basin portion of Feature 8 is included as Appendix B, Photo 13.

Vegetation associated with the inflow and outfall channels consisted of upland vegetation with hydrophytes as minor components. The channel consisted of upland ruderal species dominated by scarlet pimpernel (*Anagallis arvensis*), non-native bromes, and various mustards with minor components including rabbit's foot grass and curly dock. Photographs of the inflow and outfall channels are included as Appendix B, Photos 14 and 15.

Wetland soils were limited to the flood control basin; no wetland soils were associated with the inflow or outfall channels. Soils consisted of clays and within the flood control basin, gleyed soils. The results of the data pits are recorded in Appendix C (Sampling Points 7 and 8).

3.4.10 Feature 9

Feature 9 is a single large vernal pool located north of the intersection of Scott Road and Menifee Road in unincorporated Riverside County just north of the city of Murrieta. The pool is located within USFWS critical habitat for spreading navarretia (*Navarretia fossalis*, Federally Threatened [FT]). The pool does not have a downstream connection to any jurisdictional waters. Results of the survey have been mapped on Figures 2 and 3, Sheet 9. Due a lack of downstream connection, Feature 9 is not expected to contain jurisdiction pursuant to the ACOE. The RWQCB jurisdiction associated with the pool totals 1.33 acres, all of which is wetland. There is no 1602 CDFG jurisdiction associated with Feature 9 due to its isolation, lack of flow, and lack of defined bed and bank.

Vegetation associated with the pool is composed of various grasses and vernal pool/seasonal pool species. Dominant species include Italian rye grass, smilo grass (*Piptatherum miliaceum*), popcorn flower (*Plagiobothrys* sp.), willowherb, and common pigmyweed (*Crassula aquatica*). Minor components include various spike-rush (*Eleocharis acicularis* and *E. parishii*), rabbit's root grass, and curly dock. A photograph of this pool is included as Appendix B, Photo 16.

Wetland soils were identified within the pool. Soils consisted of loamy clays and clays. The results of the data pits are recorded in Appendix C (Sampling Points 9 and 10).

3.4.11 Feature 10

Feature 10 is the eastern extent of a large flood control basin located north of the intersection of Mapleton Avenue and Menifee Road in the city of Murrieta. The feature begins within the Proposed Project survey area flowing west. The feature drains to an underground flood control system, but is believed to connect to the Domenigoni Channel, which connects to Canyon Lake, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 10. ACOE jurisdiction associated with the basin is 0.07 acre, all of which is wetland. The RWQCB jurisdiction associated with the basin within the Proposed Project survey area totals 0.07 acre, all of which is wetland. The CDFG jurisdiction associated with Feature 10 totals 0.07 acre, all of which is riparian.

Vegetation associated with the flood control basin is composed of almost exclusively of cattails with a few individual arroyo willows. A photograph of this basin is included as Appendix B, Photo 17.

No access was provided in the basin, however based on the dominance of cattails, it is believed that the soils would have hydric soil characteristics. Therefore, we have mapped the basin as meeting the three parameter wetland definition in the basin's bottom.

3.4.12 Feature 11

Feature 11 is a large natural intermittent drainage system located approximately 2,400 feet north of the intersection of Baxter Road and Menifee Road in the city of Murrieta. The drainage is crossed multiple times by dirt access roads. At these crossings the drainage is culverted under the roads via 24 inch pipe culverts. The drainage traverses the Proposed Project survey area from northwest to southeast, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figures 2 and 3, Sheet 11. ACOE jurisdiction associated with the drainage is 0.11 acre, none of which is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.11 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 11 totals 0.68 acre, of which 0.60 acre is riparian.

Vegetation associated with Feature 11 is dominated by southern willow scrub or ornamental trees. Dominant vegetation includes eucalyptus trees, arroyo willow, red willow (*Salix laevigata*), poison hemlock (*Conium maculatum*), and non-native bromes. Minor components associated with the drainage include Mexican elderberry (*Sambucus mexicana*), willowherb, rabbits foot grass, ragweed, sweet clover (*Melilotus* sp.) and various spike-rush. Photographs of this drainage system are included as Appendix B, Photo 18 and 19.

No wetland soils were identified in multiple soil pits excavated within the drainage. Soils varied within the drainage with sandy soils being associated with lower gradient areas and hard clays associated with higher gradient areas. Results of the data pits are recorded in Appendix C (Sampling Points 11 and 12).

3.4.13 Feature 12

Feature 12 is a natural drainage system located approximately 750 feet north of the intersection of Lee Lane and Menifee Road in the city of Murrieta. The drainage is crossed once by Menifee Road and once by an unnamed dirt road with flow traveling under the road via a 12 inch pipe culvert in both instances. The drainage system traverses the Proposed Project survey area from northwest to southeast, eventually connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. The drainage system contains multiple tributaries of which are either ephemeral or intermittent. The entire system had varying levels of incised banks, with the intermittent portion of the system containing deeply incised banks ranging from three to six feet in depth. Results of the survey have been mapped on Figures 2 and 3, Sheet 12. ACOE jurisdiction associated with the drainage is 0.14 acre, of which 0.02 acre is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.14 acre, of which 0.02 acre is wetland. The CDFG jurisdiction associated with Feature 11 totals 0.92 acre, of which 0.84 acre is riparian.

Vegetation associated with the ephemeral tributaries of the drainage system is dominated by upland species. Dominant vegetation associated with the ephemeral tributaries includes various mustards, buckwheat (*Eriogonum fasciculatum*), and various non-native bromes. Vegetation associated with the intermittent tributaries was dominated by riparian trees. Dominant

vegetation associated with the riparian tributaries includes coast live oak (*Quercus agrifolia*), arroyo willow, red willow, and mulefat. Photographs of this drainage system are included as Appendix B, Photo 20 and 21.

One small portion of the drainage system contained wetland soils. The area that contained wetland soils was a small natural impoundment where water would remain and saturate the soil. There were no other wetland soils associated with the system. Results of the data pits are recorded in Appendix B (Sampling Points 13 and 14).

3.4.14 Feature 13

Feature 13 is a natural intermittent drainage located approximately 270 feet north of the intersection of Clinton Keith Road and Menifee Road in the city of Murrieta. The drainage is crossed by Menifee Road with flow traveling under the road via a 24 inch pipe culvert. The feature traverses the Proposed Project survey area from west to east, connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. The drainage was relatively incised with banks ranging from three to six feet in depth. Results of the survey have been mapped on Figures 2 and 3, Sheets 13 and 14. ACOE jurisdiction associated with the drainage is 0.18 acre, none of which acre is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.18 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 11 totals 0.92 acre, of which 0.84 acre is riparian.

Vegetation associated with Feature 13 was generally riparian. Vegetation was dominated by arroyo and red willow with the bottom of the drainage being generally unvegetated. Minor components associated with the drainage include Mexican elderberry, willowherb, rabbits foot grass, ragweed, and sweet clover. A photograph of this drainage is included as Appendix B, Photo 22.

No wetland soils were associated with the drainage. Soils were very sandy. The result of the data pit is recorded in Appendix C (Sampling Point 15).

3.4.15 Feature 14

Feature 14 is an ephemeral drainage located approximately 3,050 feet east of the intersection of Clinton Keith Road and Menifee Road in the city of Murrieta. The drainage is crossed by Clinton Keith Road with flow traveling under the road via a 12 inch pipe culvert. At the discharge area north of Scott Road, the drainage loses its OHWM and sheet flows for approximately 190 feet. The feature traverses the Proposed Project survey corridor from southwest to northeast, connecting to Warm Springs Creek, which connects to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. The drainage is broad with small banks. Results of the survey have been mapped on Figure 2, Sheet 14. ACOE jurisdiction associated with the drainage is 0.02 acre, none of which is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.02 acre, none of which is wetland. The CDFG jurisdiction associated with Feature 14 totals 0.09 acre, of which 0.08 acre is riparian.

Vegetation associated with Feature 14 was weedy with riparian components. Vegetation was dominated by hemlock, various bromes, and arroyo willow. Minor components associated with the drainage include deer grass (*Muhlenbergia rigens*), ragweed, and sweet clover. A photograph of this drainage is included as Appendix B, Photo 23.

No wetland soils were associated with the drainage. Soils were very sandy. The result of the data pit is recorded in Appendix C (Sampling Point 16).

3.4.16 Warm Springs Creek

Warm Springs Creek is a natural, perennial drainage located near the intersection of Clinton Keith Road and Jeanette Drive in unincorporated Riverside County. The drainage is crossed by Clinton Keith Road with flow traveling under the road via a 36 inch pipe culvert. The feature traverses the Proposed Project survey area from north to south, connecting to Murrieta Creek, and the Santa Margarita River, which ultimately connects to the Pacific Ocean, the closest TNW. The drainage was relatively incised with banks ranging from four to eight feet in depth. Results of the survey have been mapped on Figures 2 and 3, Sheet 15. ACOE jurisdiction associated with the drainage is totals 0.18 acre, of which 0.16 acre is wetland. The RWQCB jurisdiction associated with the drainage within the Proposed Project survey area totals 0.18 acre, of which 0.16 acre is wetland. The CDFG jurisdiction associated with Warm Springs Creek totals 0.68 acre, of which 0.66 acre is riparian.

Vegetation associated with Warm Springs Creek was generally riparian. Vegetation was dominated by arroyo willow, red willow, Freemont cottonwood with the bottom of the drainage dominated by California bulrush and mulefat. Minor components associated with the drainage include willowherb, rabbit's foot grass, and mugwort (*Ambrosia douglasiana*). A photograph of this drainage is included as Appendix B, Photo 24.

Soil pits were excavated in Warm Springs Creek indicating wetland soils. Soils were composed of sandy loams and loams. Results of the data pit are recorded in Appendix C (Sampling Point 17).

3.5 AREAS OF NON-JURISDICTION

There are a number of non-jurisdictional swales located throughout the survey area. Most of the non-jurisdictional swales are concentrated north of Scott Road within agricultural lands. Typically, the swales are low gradient vegetated areas located at the foot of hillsides or other minor changes in topography. Often the swales are located in agricultural areas that are regularly disked. The swales are not considered jurisdictional and are generally characterized by low volume, infrequent or short duration flow, lack of an OHWM, lack of dominant hydrophytes, lack of defined bed and bank, and the inability to support fish or other aquatic life. Any swale that has the characteristics of a natural waterway (i.e. vegetation, standing water, etc.) may contain jurisdiction pursuant to the CFG Code and would be included within our assessment of jurisdiction within Section 3.4.

3.6 UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTION

The potential ACOE jurisdiction within the Proposed Project survey area totals approximately 10.27 acres, of which 9.38 acres is wetland and 0.89 is waters of the U.S. The location and limits of these ACOE jurisdictional areas are depicted on Figure 2. Representative site photographs are provided as Appendix B and data forms are provided as Appendix C. The totals of the ACOE jurisdiction are summarized in Table 1, Summary of Potential 404 and 401 Jurisdiction.

Table 1: Summary of Potential 404 and 401 Jurisdiction

Feature Name	Waters of the U.S (Acres)	Wetland Areas (Acres)	Total ACOE Jurisdiction (Acres)	Approximate Linear Feet
Domenigoni Channel		4.30	**4.30**	500
Feature 4	0.04	-	**0.04**	1,390
Feature 5		4.36	**4.36**	1,220
Feature 6	-	0.01	**0.01**	190
Feature 7		0.10	**0.10**	645
Feature 8	0.40	0.36	**0.76**	640
Feature 10	-	0.07	**0.07**	75
Feature 11	0.11	-	**0.11**	1,610
Feature 12	0.12	0.02	**0.14**	2,420
Feature 13	0.18		**0.18**	1,745
Feature 14	0.02	-	**0.02**	655
Warm Springs Creek	0.02	0.16	**0.18**	990
Totals 0.89		**9.38**	**10.27**	**12,080**

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3.7 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

The Domenigoni Channel, Warm Springs Creek, and nine drainage features within the Proposed Project survey area have been determined to be ACOE jurisdictional waters subject to regulation pursuant to Section 401 and 404 of the CWA and do not need to be addressed separately pursuant to Section 13260 of the State of California Water Code, the Porter-Cologne Act (Table 1, above). However, four features are isolated waters and are potentially not subject to ACOE jurisdiction. Since these features are outside of ACOE jurisdiction, they may be subject to a Waste Discharge Requirements (WDR) from the RWQCB pursuant to Section 13260 of the Porter-Cologne Water Quality Act. The totals of these isolated features are summarized in Table 2, *Summary of Potential RWQCB Jurisdiction Subject to WDR Requirements*. The locations of these features are depicted on the enclosed maps (Figure 2) and photographs (Appendix B), and are described in Section 3.4 of this report.

Table 2: Summary of Potential RWQCB Jurisdiction Subject to WDR Requirements

Feature Name	Waters Areas (Acres)	Wetland Areas (Acres)	Total RWQCB Jurisdiction (Acres)	Approximate Linear Feet
Feature 1	0.38		**0.38**	1,380
Feature 2	0.68		**0.68**	1,620
Feature 3	0.11		**0.11**	1,550
Feature 9		1.33	**1.33**	N/A
Totals 1.17		**1.33**	**2.50**	**4.550**

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3.8 CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION

CDFG jurisdiction associated with the Proposed Project survey area totals approximately 14.98 acres of which 13.51 acres consists of vegetated riparian habitat and 1.47 acres consists of unvegetated streambed. Only one feature, Feature 9, is not CDFG 1602 jurisdictional due to its isolation and lack of defined bed and bank. CDFG jurisdiction includes all areas within ACOE jurisdiction and areas potentially subject to WDR requirements (with the exception being Feature 9) in addition to adjacent associated riparian vegetation. A detailed description of the drainages is found in Section 3.4 of this report. The acreage of all features mapped during the field survey is listed in Table 3, *Summary of CDFG Jurisdiction*. The locations of these features are depicted on the enclosed maps (Figure 2) and photographs (Appendix B), and are described in Section 3.4 of this report.

Table 3: Summary of CDFG Jurisdiction

Feature Name	CDFG Unvegetated (Acres)	CDFG Riparian (Acres)	Total CDFG Jurisdiction (Acres)	Approximate Linear Feet
Feature 1	0.38		**0.38**	1,380
Feature 2	0.63	0.32	**0.95**	1,620
Domenigoni Channel		4.30	**4.30**	500
Feature 3	0.11		**0.11**	1,550
Feature 4	0.04	-	**0.04**	1,390
Feature 5		4.36	**4.36**	1,220
Feature 6	0.01		**0.01**	190
Feature 7	0.02	0.29	**0.31**	645
Feature 8	0.04	0.73	**0.77**	640
Feature 10		0.07	**0.07**	75
Feature 11	0.08	0.60	**0.68**	1,610
Feature 12	0.08	0.84	**0.92**	2,420
Feature 13	0.05	1.26	**1.31**	1,745
Feature 14	0.01	0.08	**0.09**	655
Warm Springs Creek	0.02	0.66	**0.68**	990
Totals	**1.47 13.5**	**1 14.9**	**8**	**16,630**

4.0 POTENTIAL PERMIT REQUIREMENTS FROM PROJECT IMPACTS TO JURISDICTIONAL FEATURES

Any permanent or temporary impacts to the drainages identified in this report would likely require permits from the regulatory agencies (ACOE, RWQCB, and CDFG). Impacts should be considered from Proposed Project activities including the removal and installation of structures, temporary work spaces, pull and tension sites, erosion and sediment controls, and project access requirements. The jurisdictional limits identified in this report are subject to verification by the regulatory agencies. A Jurisdictional Determination letter confirming jurisdiction can be requested from ACOE by submitting an Approved Jurisdictional Determination Form, which involves a significant nexus analysis pursuant to Rapanos, in addition to supporting documentation. An analysis of impacts will be performed and potential permitting strategies developed, based upon the delineation in this report and the Proposed Project design. The results of the analysis will be presented in the Biological Resources Assessment for the Proposed Project. The impacts analysis would be used to prepare the permit applications pursuant to Sections 401 and 404 of the CWA (RWQCB and ACOE, respectively), and Section 1602 of the CFG Code (CDFG).

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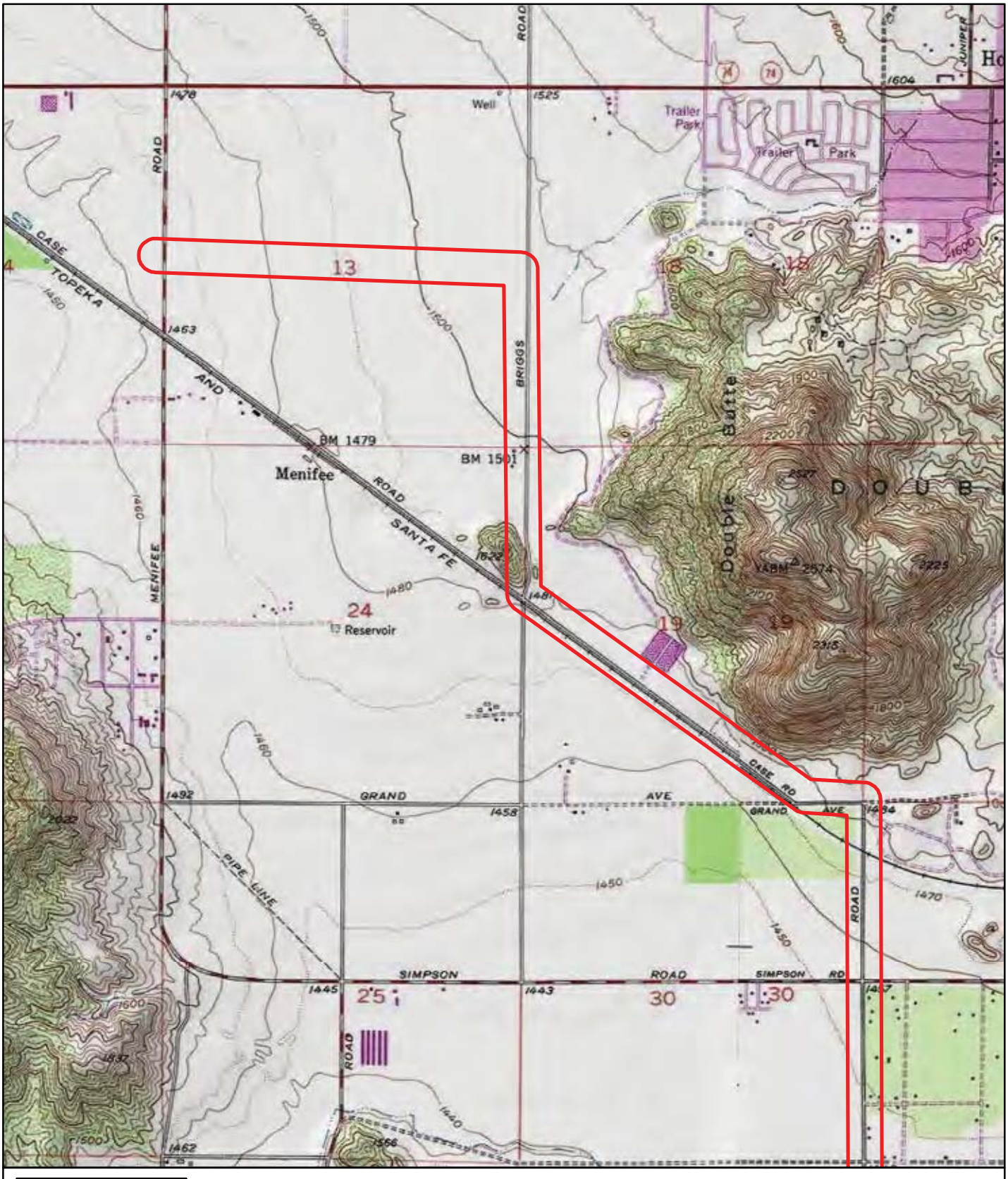
USGS (U.S. Geological Survey). 1979a. Murrieta, California 7.5-minute series topographic quadrangle. United States Department of Interior.

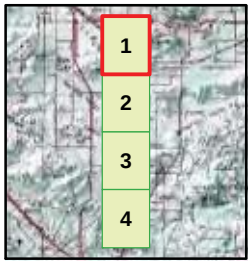
USGS (U.S. Geological Survey). 1979b. Romoland, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (U.S. Geological Survey). 1979c. Winchester, California 7.5-minute series topographic quadrangle. United States Department of Interior.

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FIGURES





Legend

500ft Survey Corridor

N

0 1,000 2,000 4,000 Feet

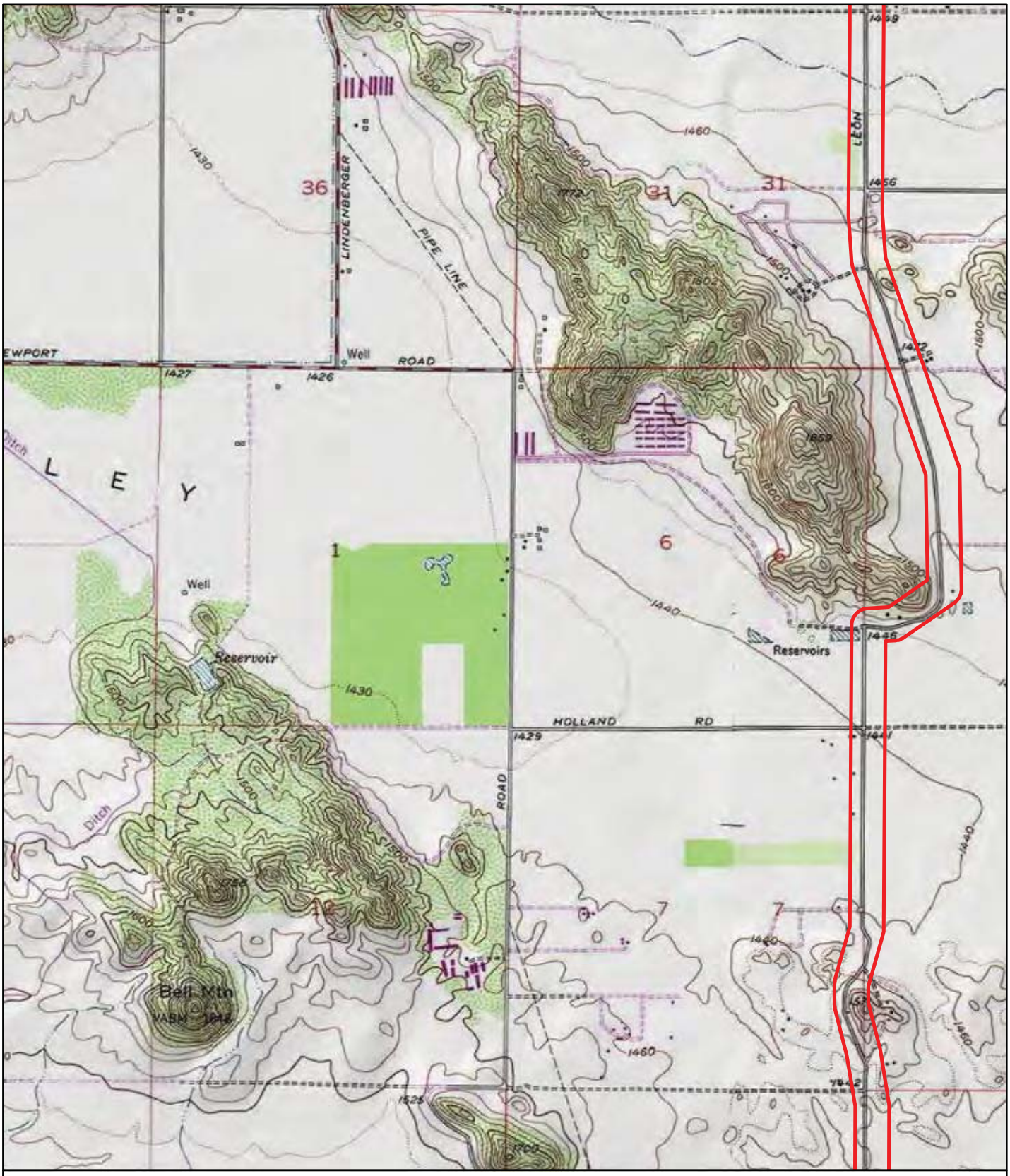
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Valley South Subtransmission Project

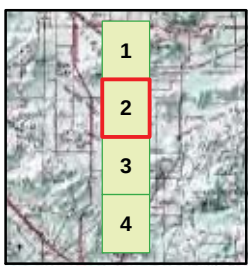
Vicinity Map

Sheet 1 of 4

Figure 1

TRC





Legend

500ft Survey Corridor

N

0 1,000 2,000 4,000 Feet

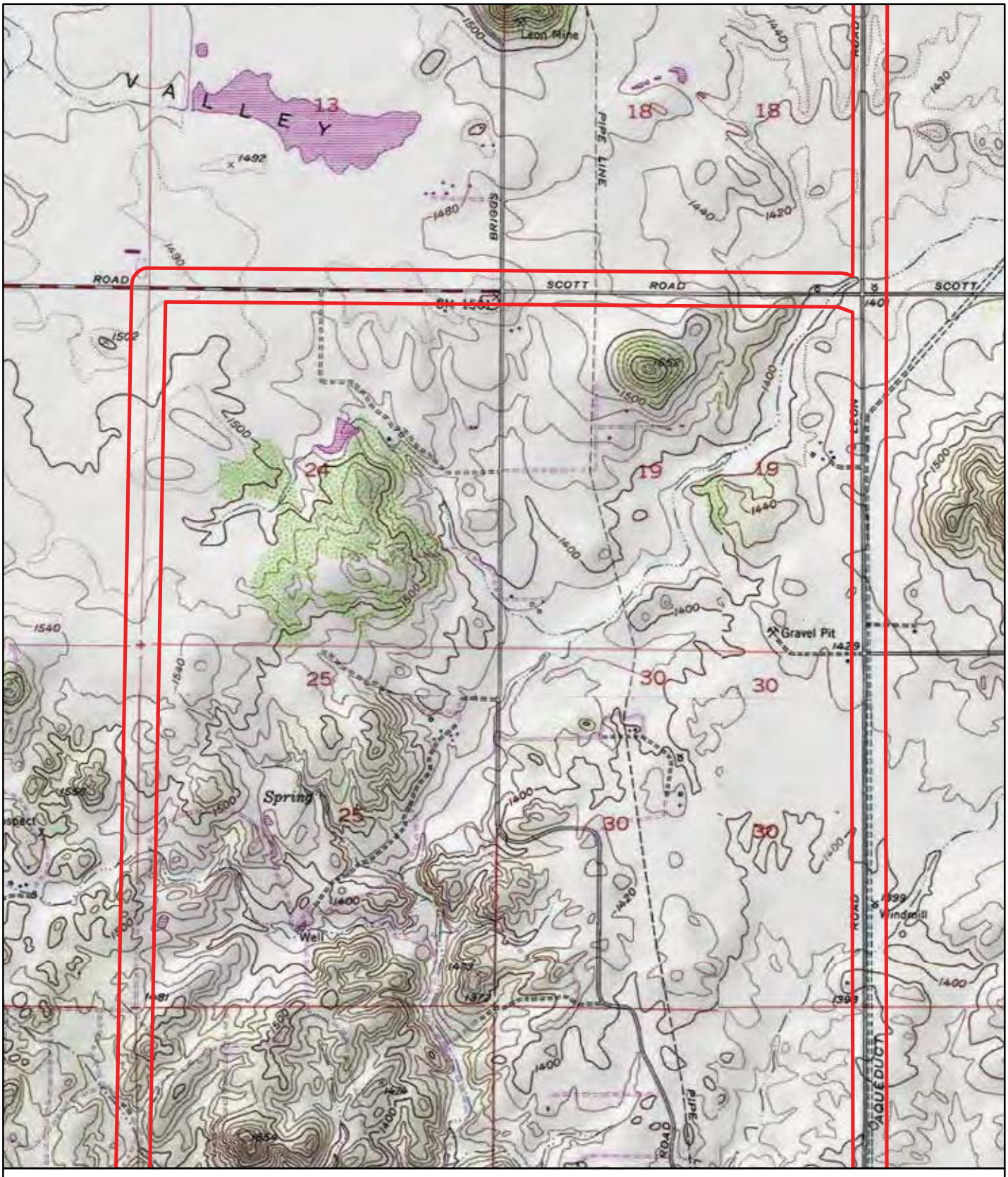
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Valley South Subtransmission Project

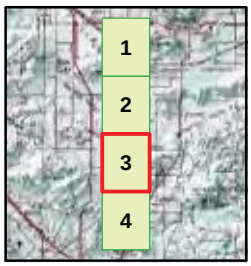
Vicinity Map

Sheet 2 of 4

Figure 1

TRC





Legend

500ft Survey Corridor

N

0 1,000 2,000 4,000 Feet

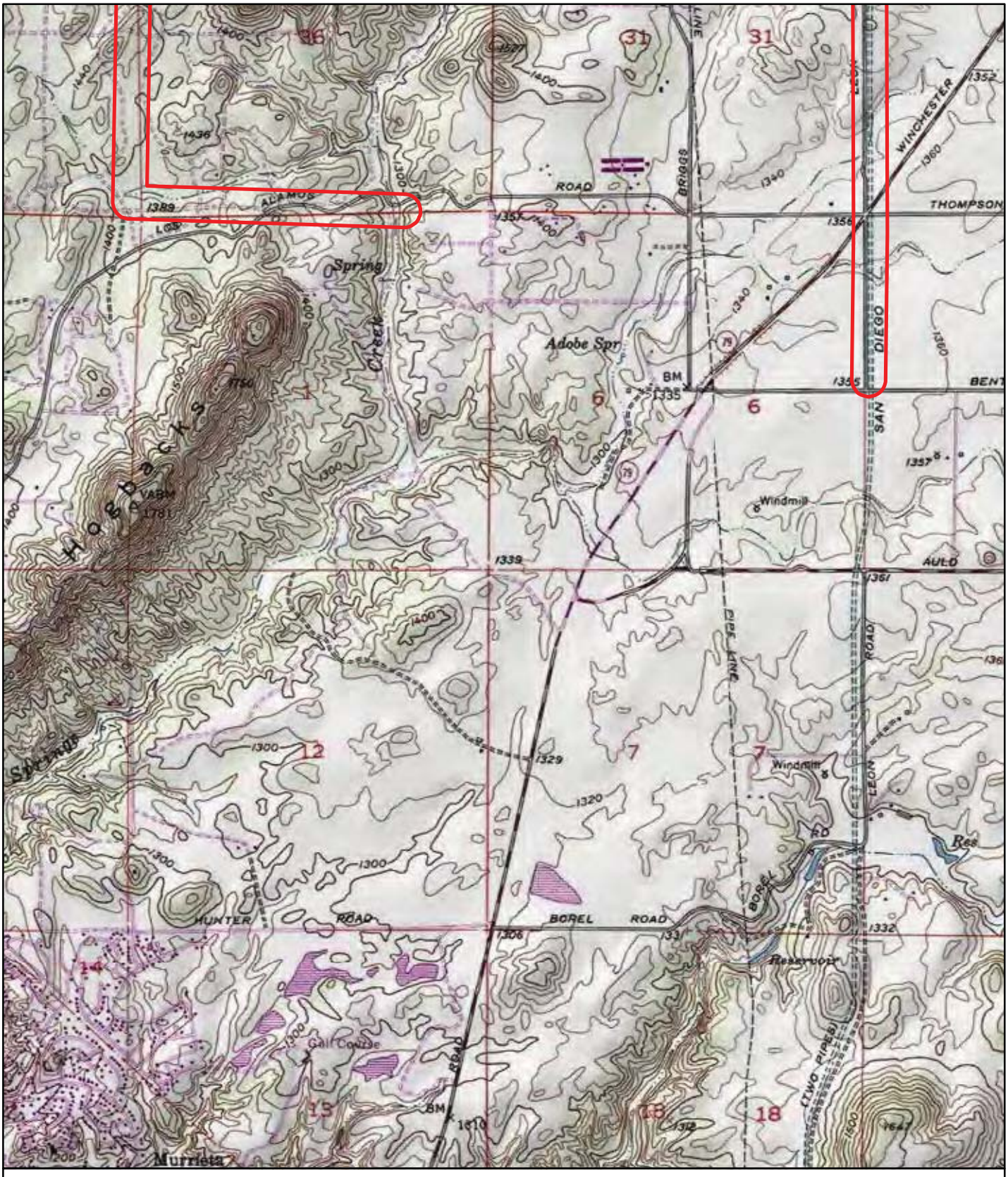
Southern California Edison
Valley South Subtransmission Project

Vicinity Map

Sheet 3 of 4

Figure 1

TRC



Legend

500ft Survey Corridor

N

0 1,000 2,000 4,000 Feet

Southern California Edison
Valley South Subtransmission Project

Vicinity Map

Sheet 4 of 4

Figure 1

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure2Delineation05012012.mxd

Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 1 of 15

Figure 2

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure2Delineation05012012.mxd

Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 2 of 15

Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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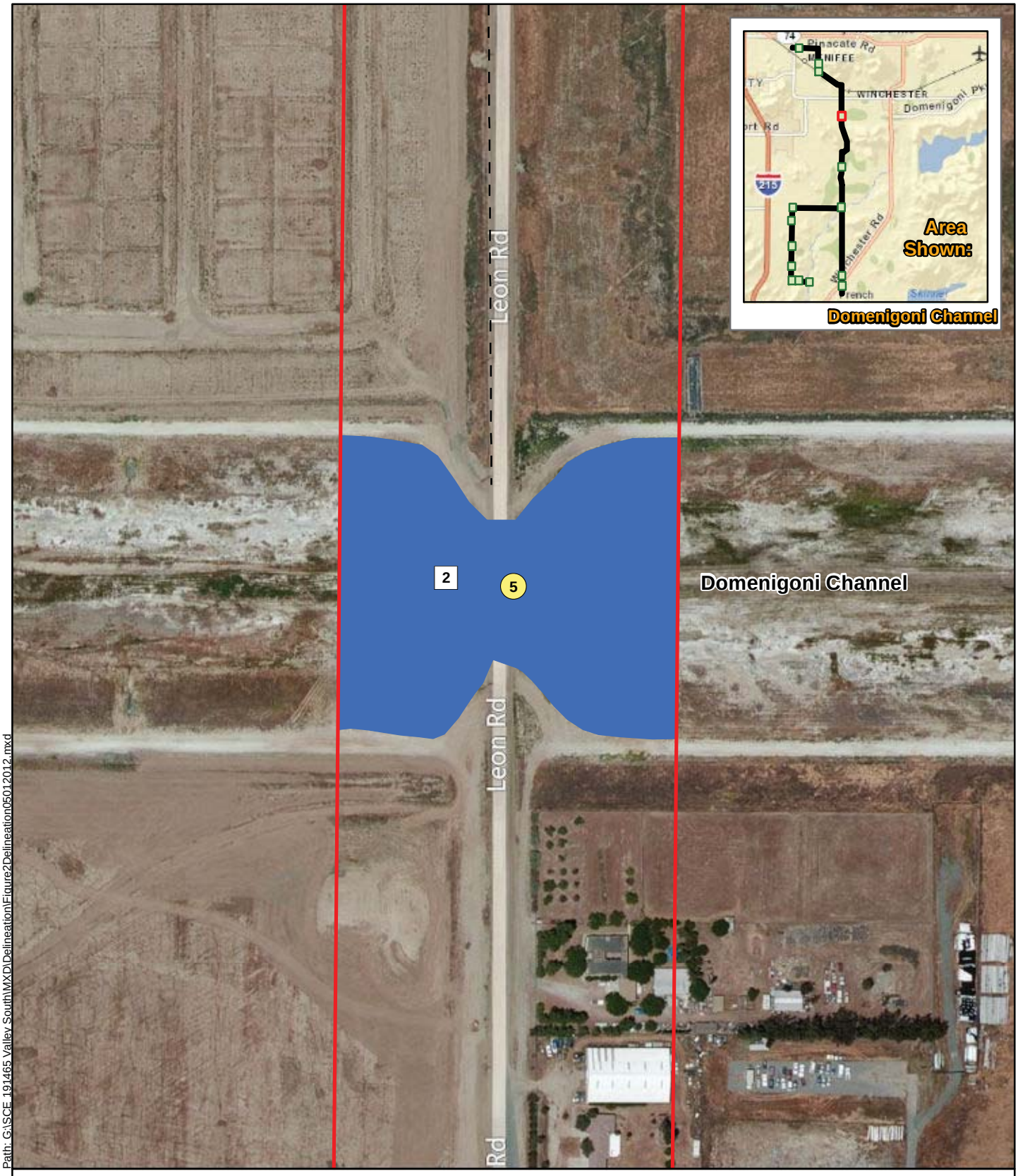
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 3 of 15

Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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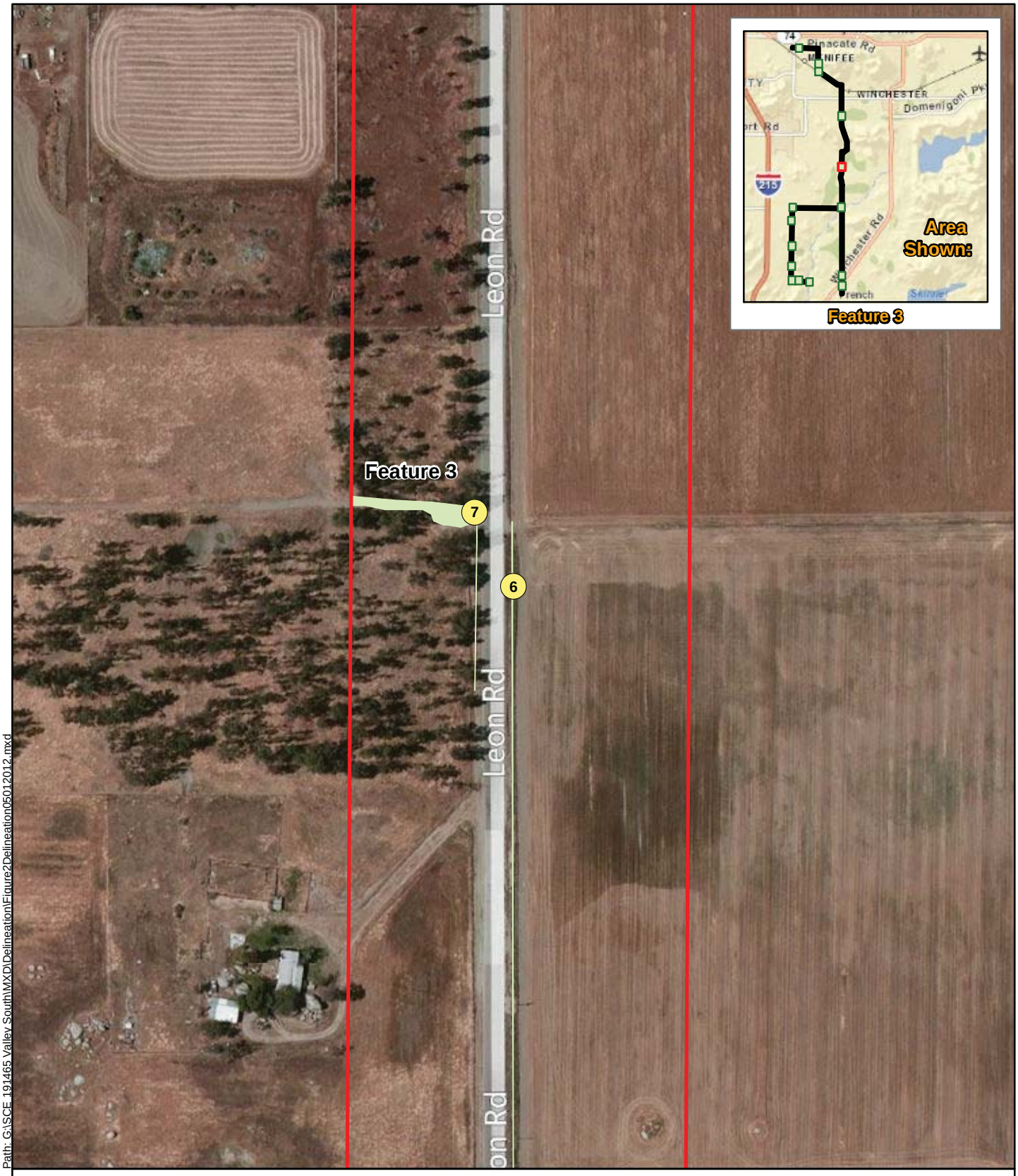
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 4 of 15

Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 5 of 15

Figure 2

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure2Delineation05012012.mxd

Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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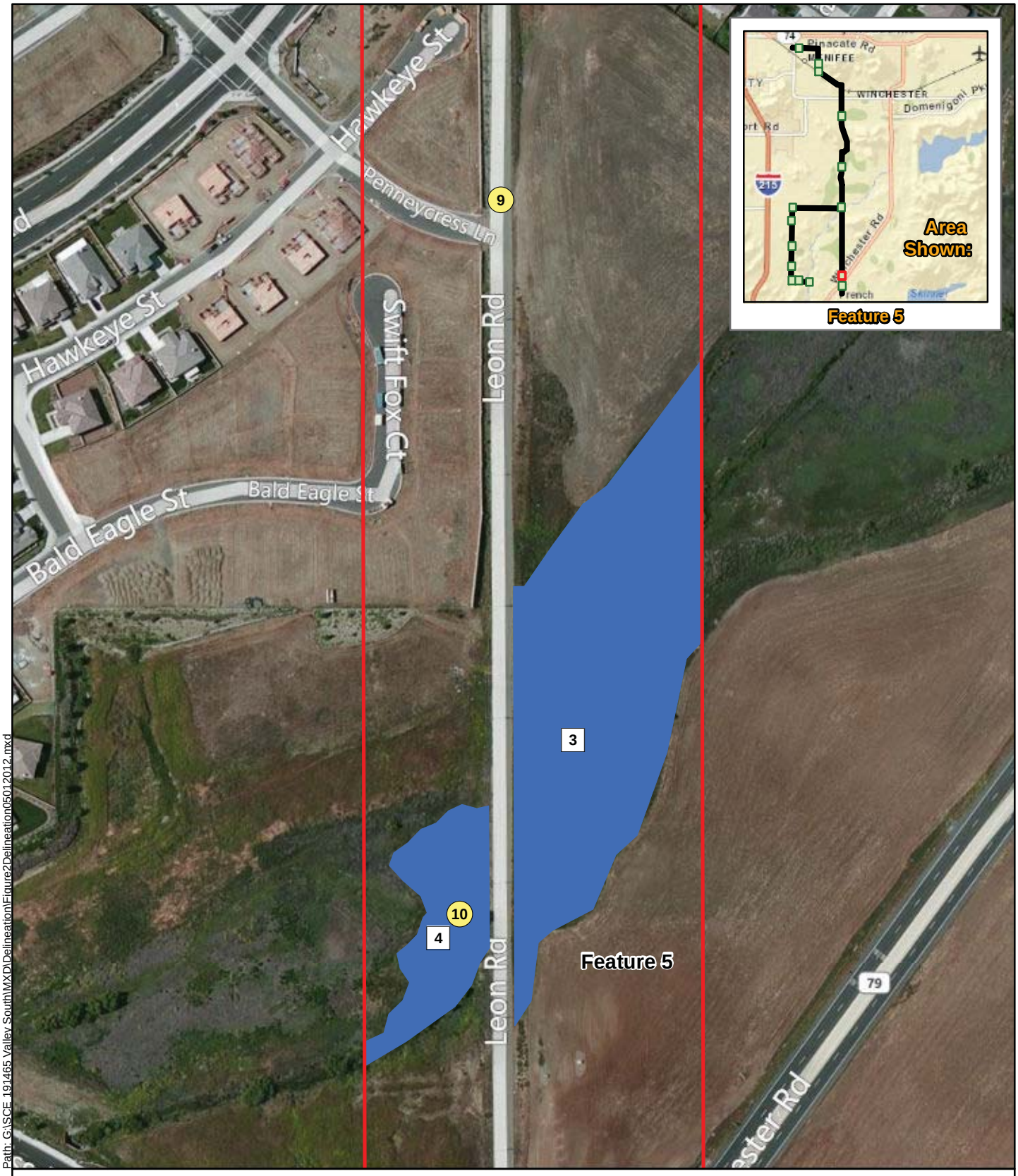
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 6 of 15

Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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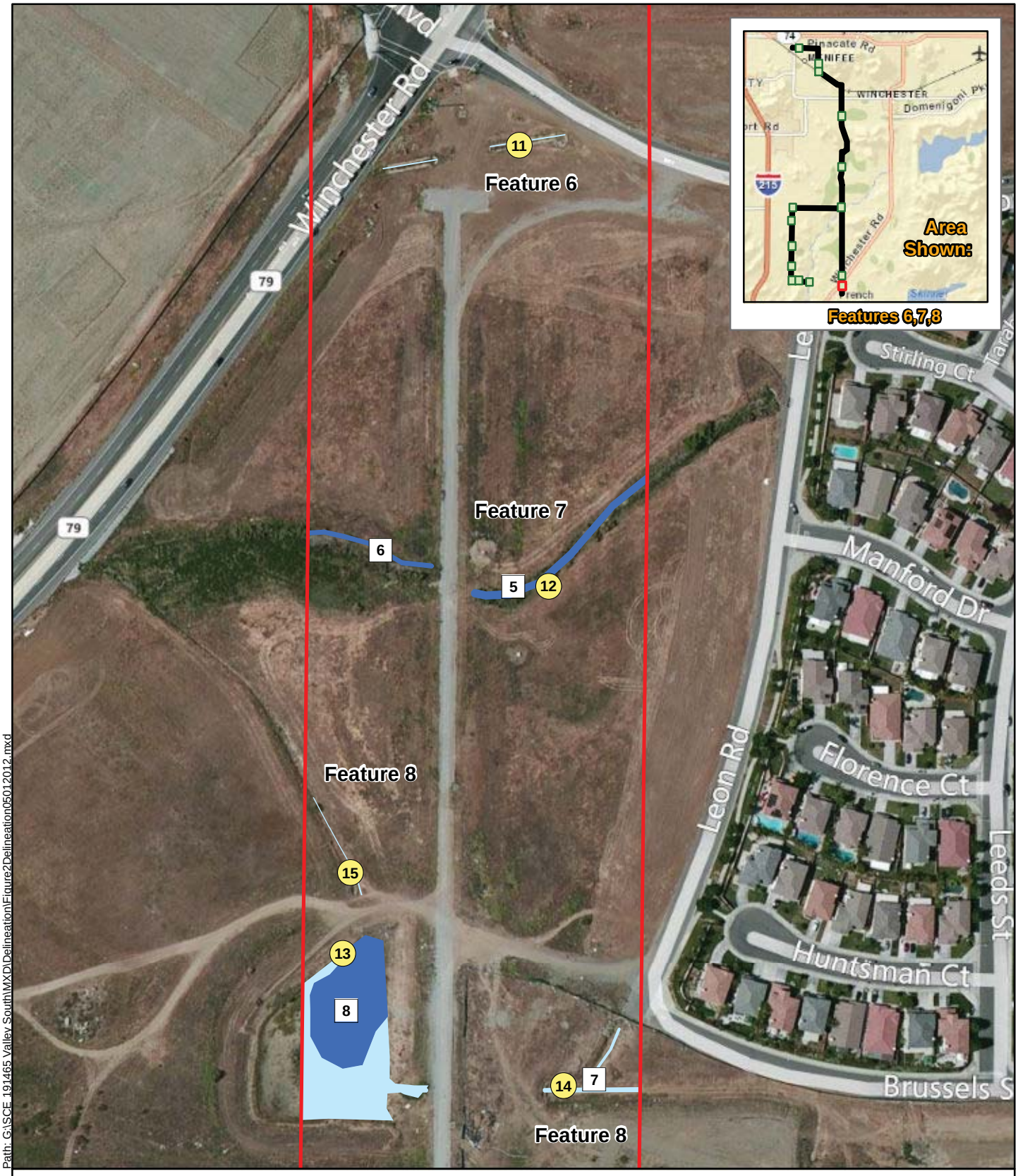
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

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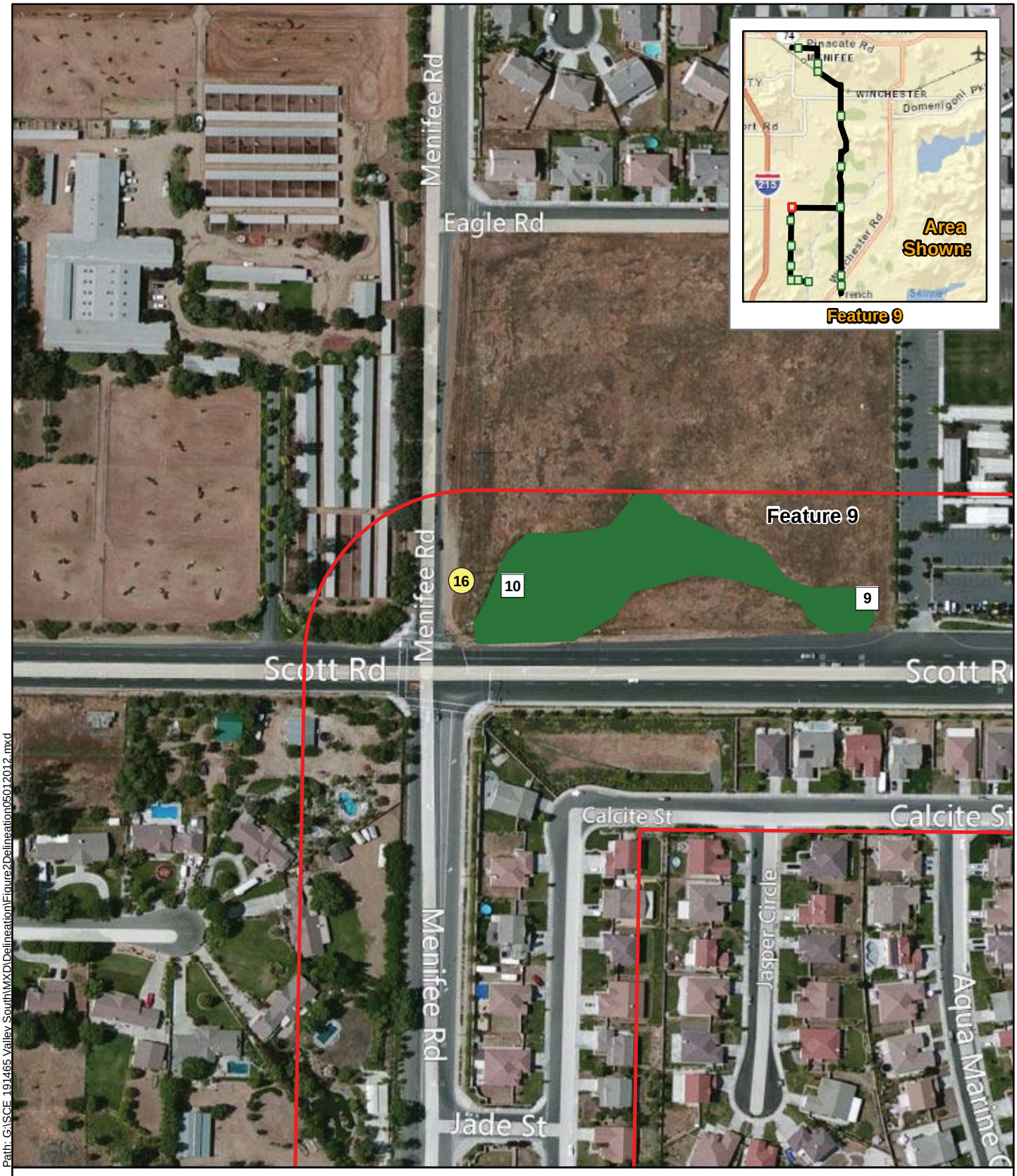
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

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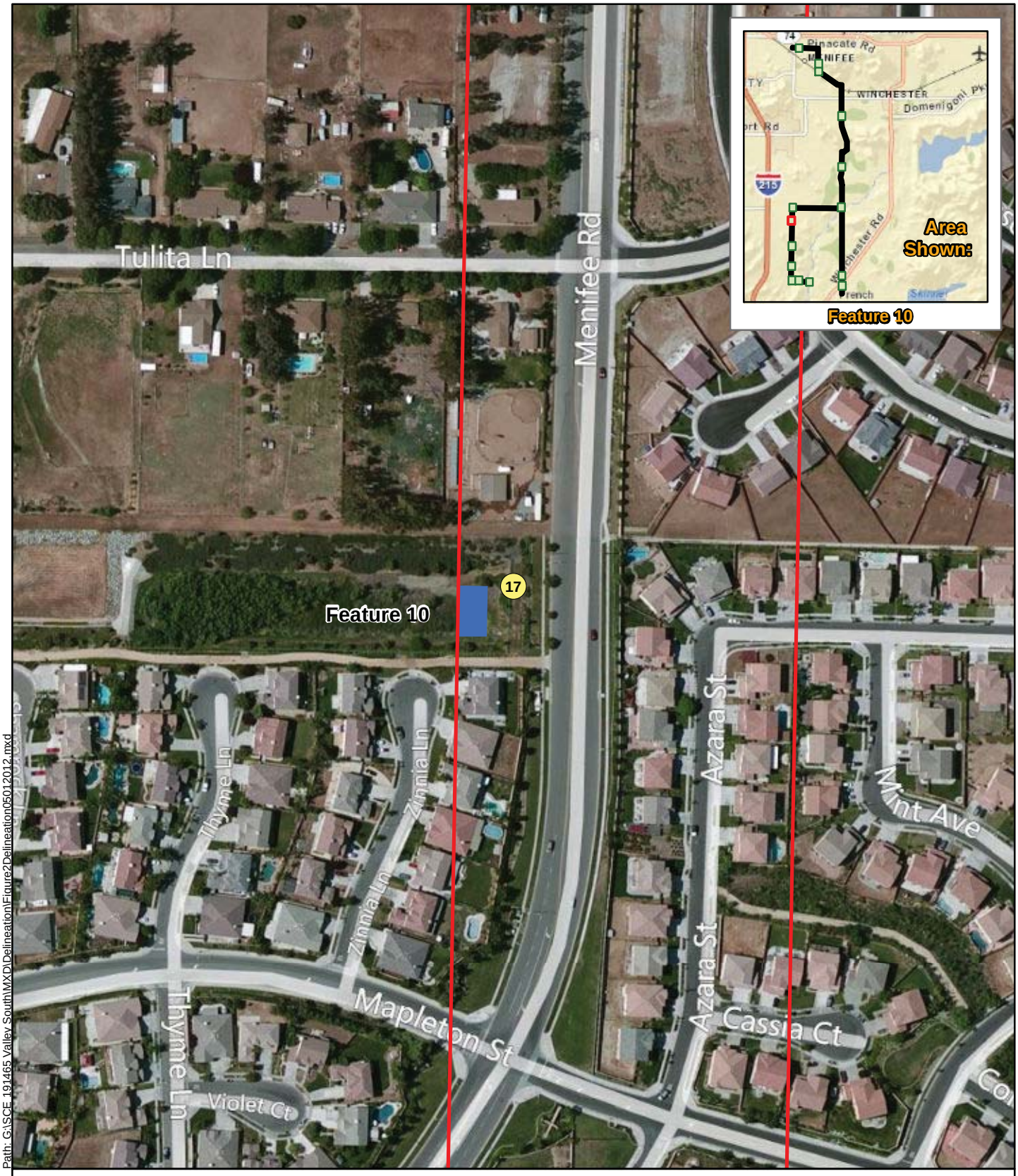
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

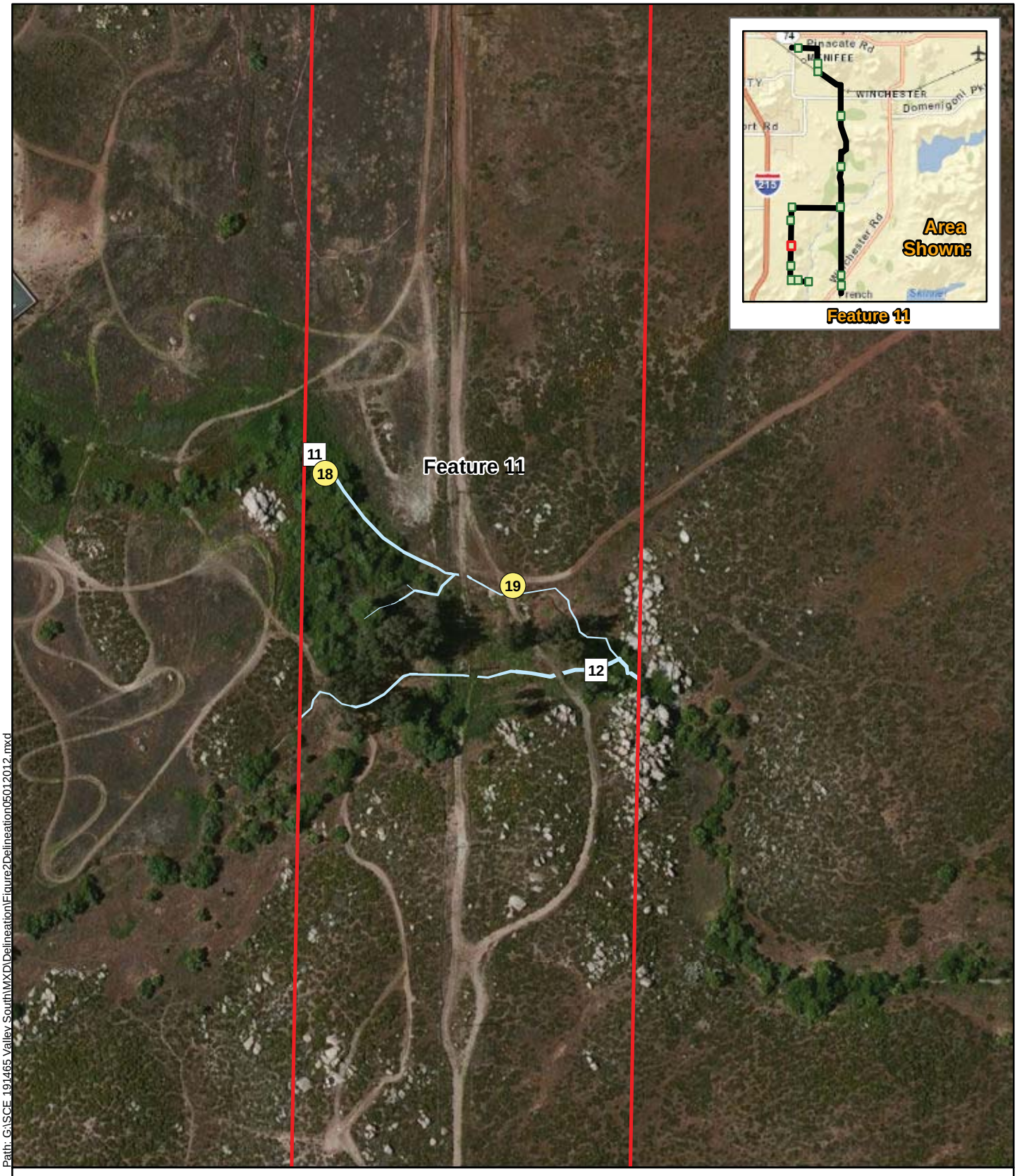
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

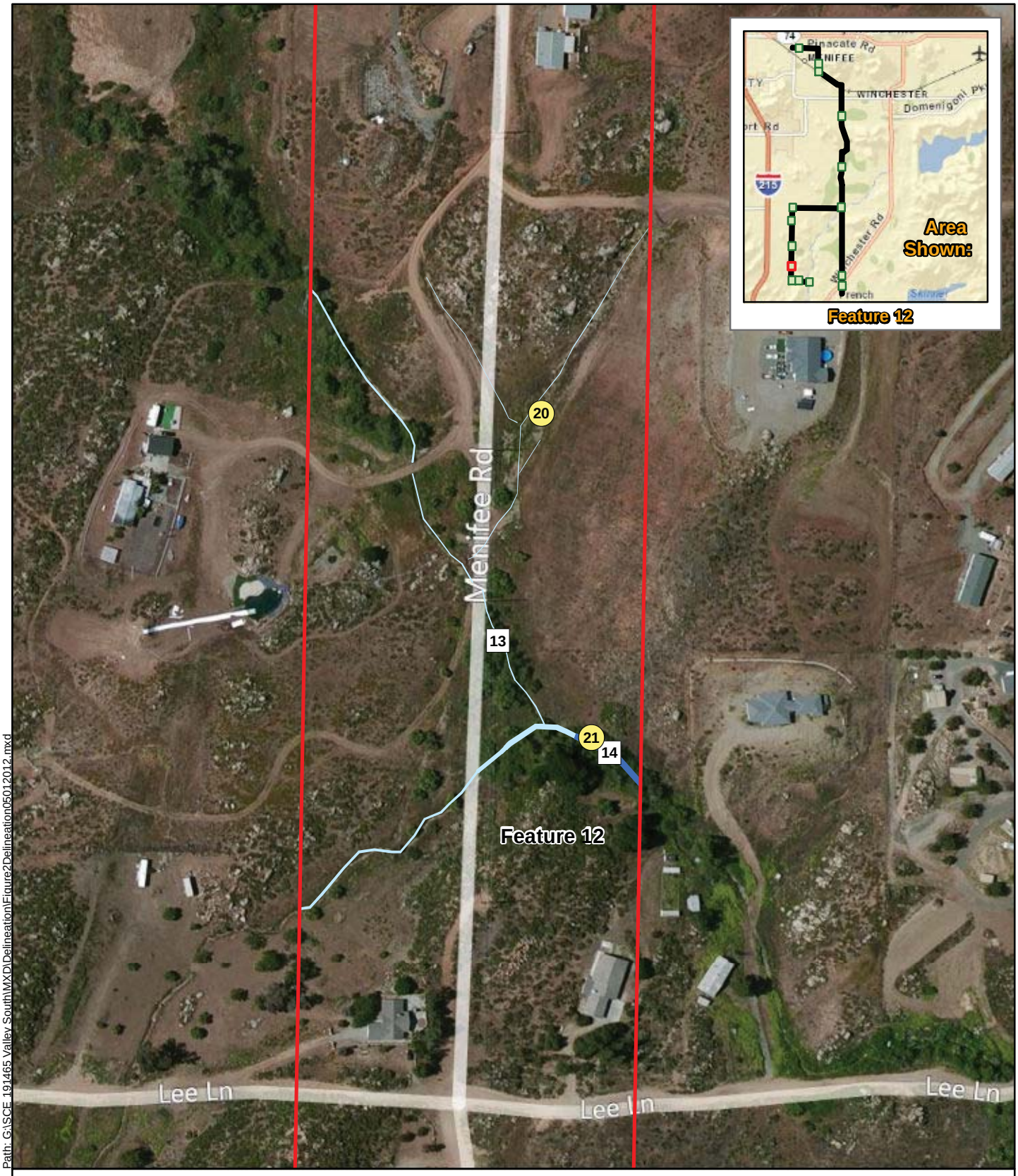
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 12 of 15

Figure 2

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure2Delineation05012012.mxd

Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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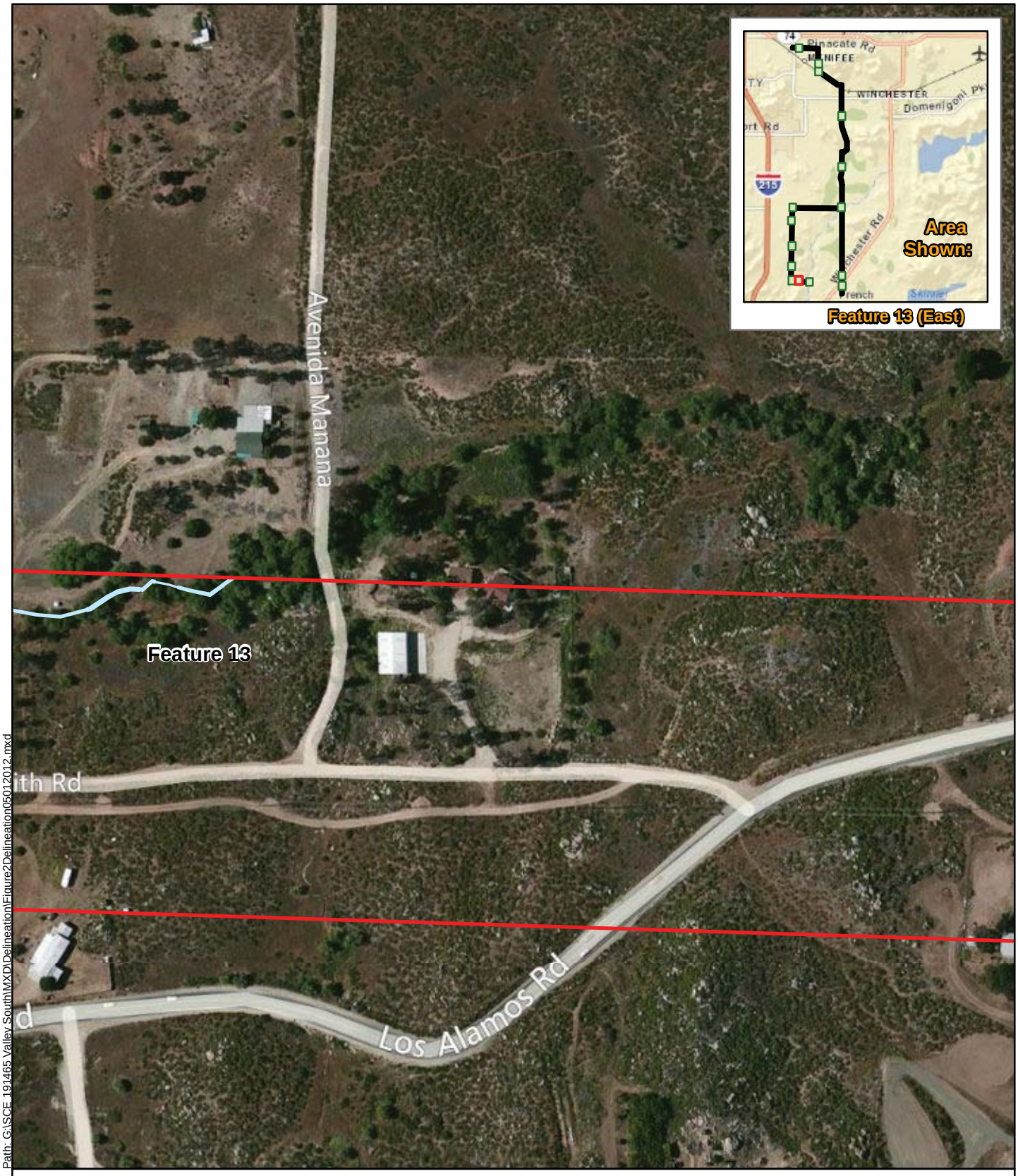
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

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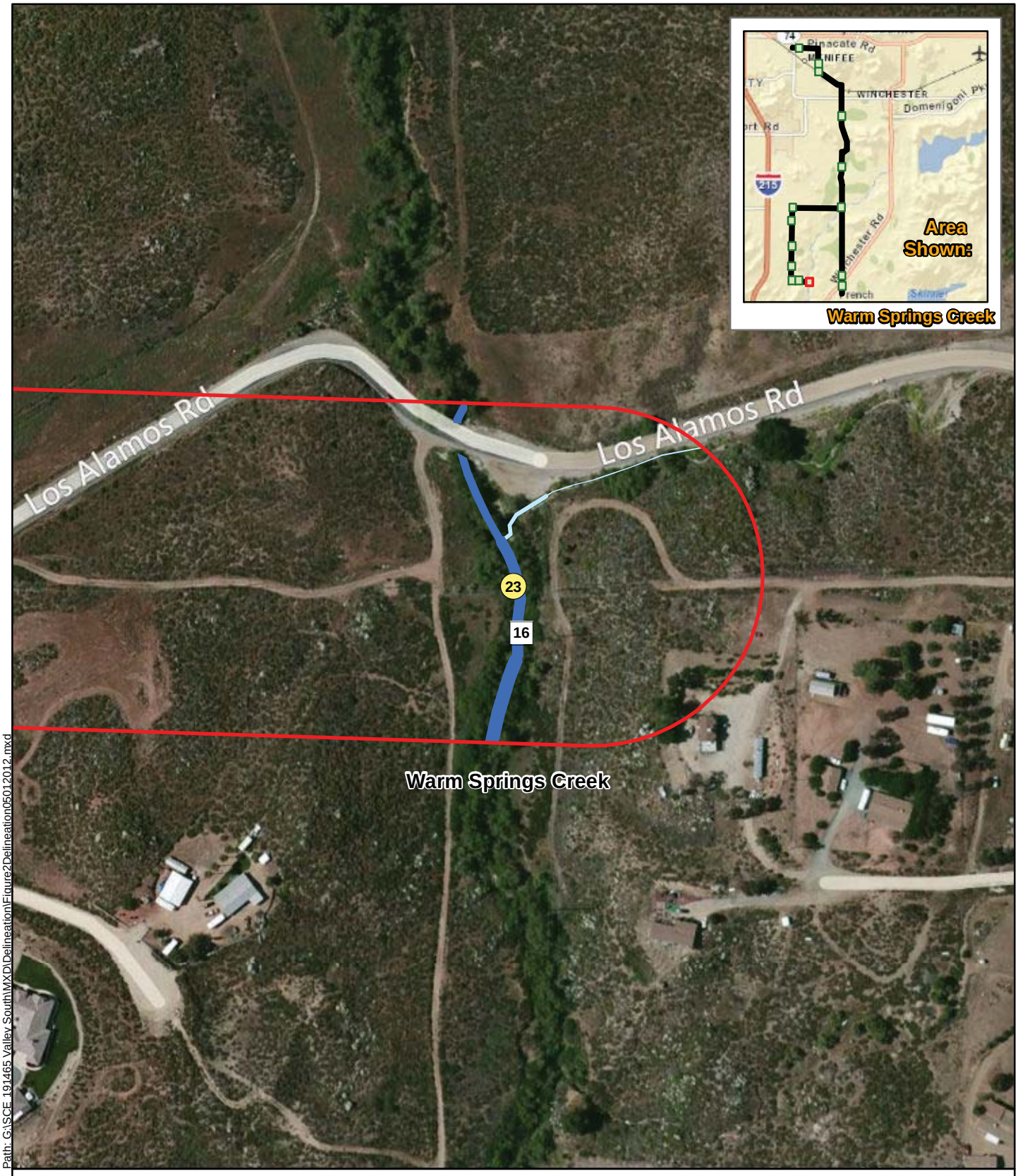
Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

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Figure 2

TRC



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Legend

- 500ft Survey Corridor
- ACOE Waters
- ACOE Wetlands
- RWQCB Only Waters
- RWQCB Only Wetlands
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project

ACOE and RWQCB Jurisidiction Map

Sheet 15 of 15

Figure 2

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

N

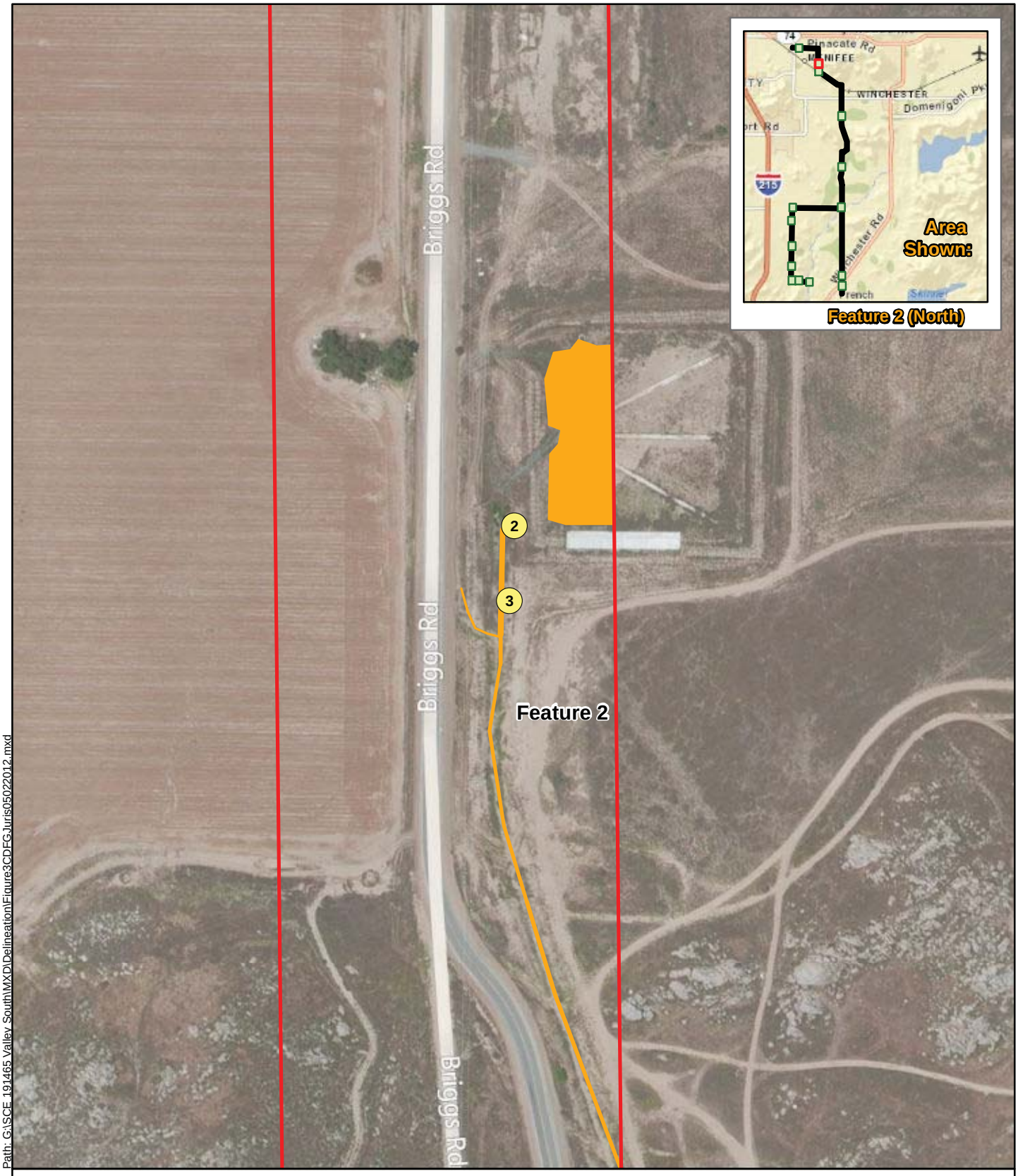
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 1 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations (#)
- Wetland Pit (#)

Source: Bing Maps Aerial Imagery

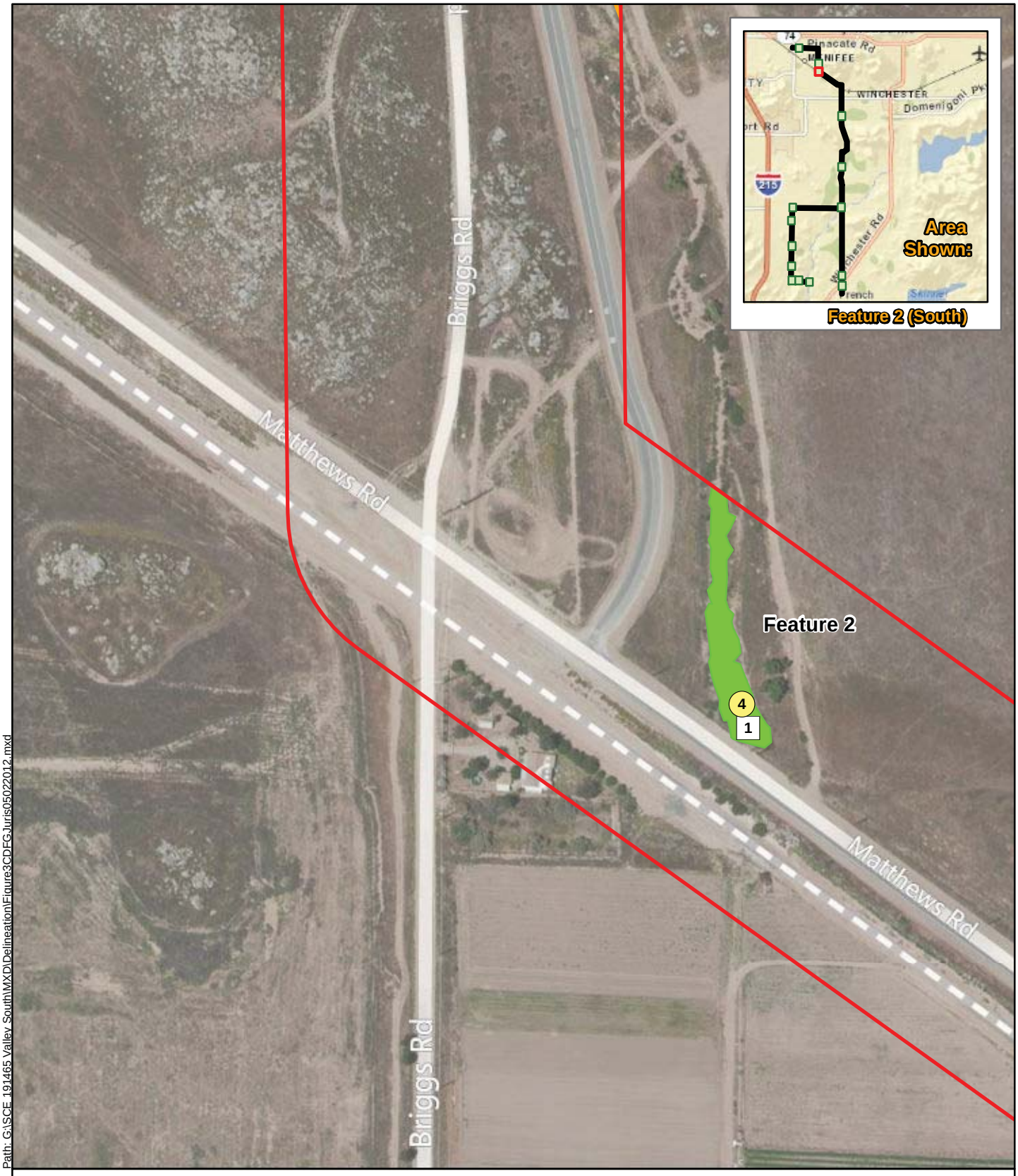
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 2 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

Source: Bing Maps Aerial Imagery

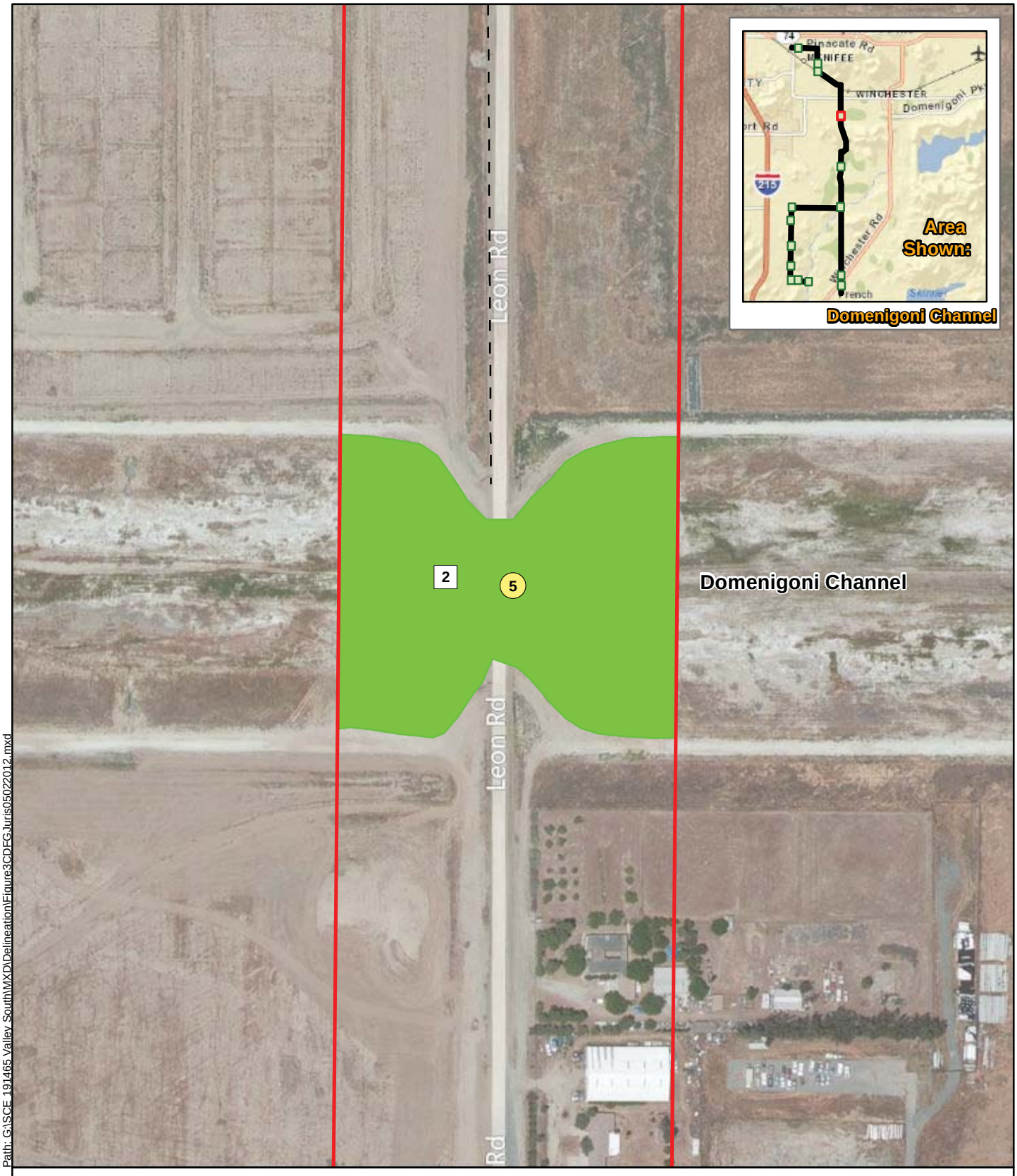
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 3 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations
- Wetland Pit

Source: Bing Maps Aerial Imagery

Southern California Edison
Valley South Subtransmission Project

CDFG Jurisdiction Map

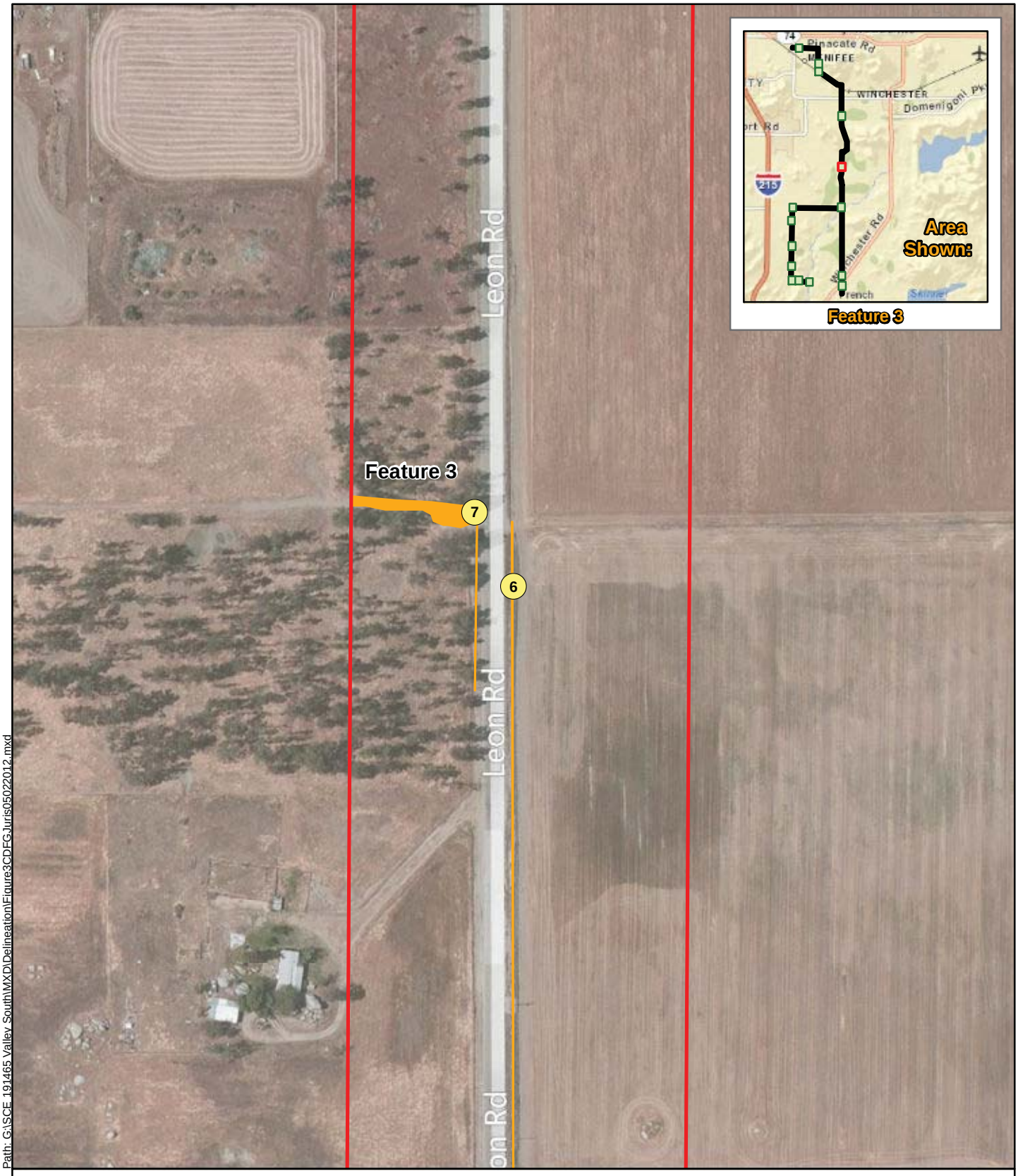
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Sheet 4 of 15

Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations (#)
- Wetland Pit (#)

Source: Bing Maps Aerial Imagery

Southern California Edison
Valley South Subtransmission Project

CDFG Jurisdiction Map

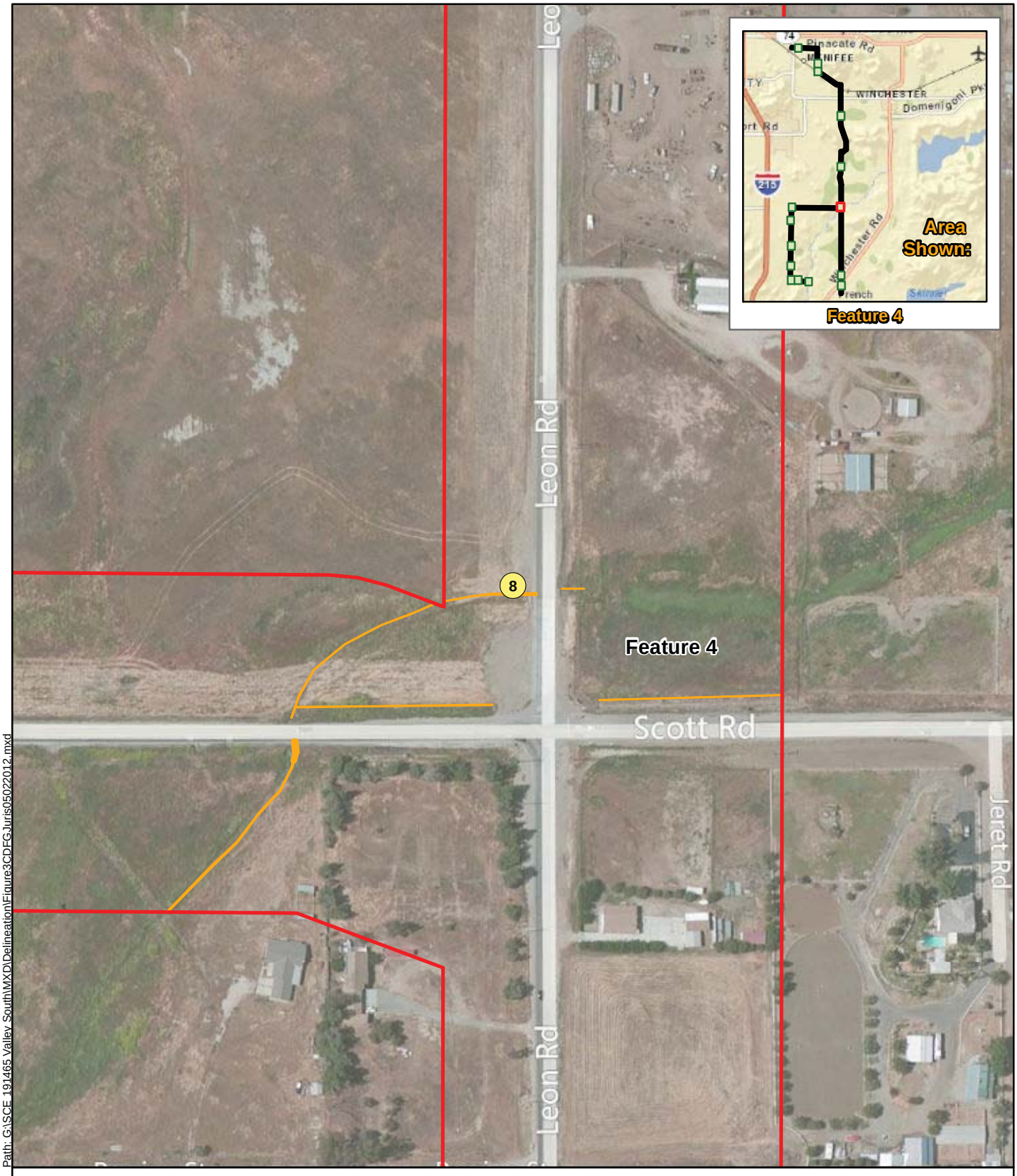
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Sheet 5 of 15

Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

Source: Bing Maps Aerial Imagery

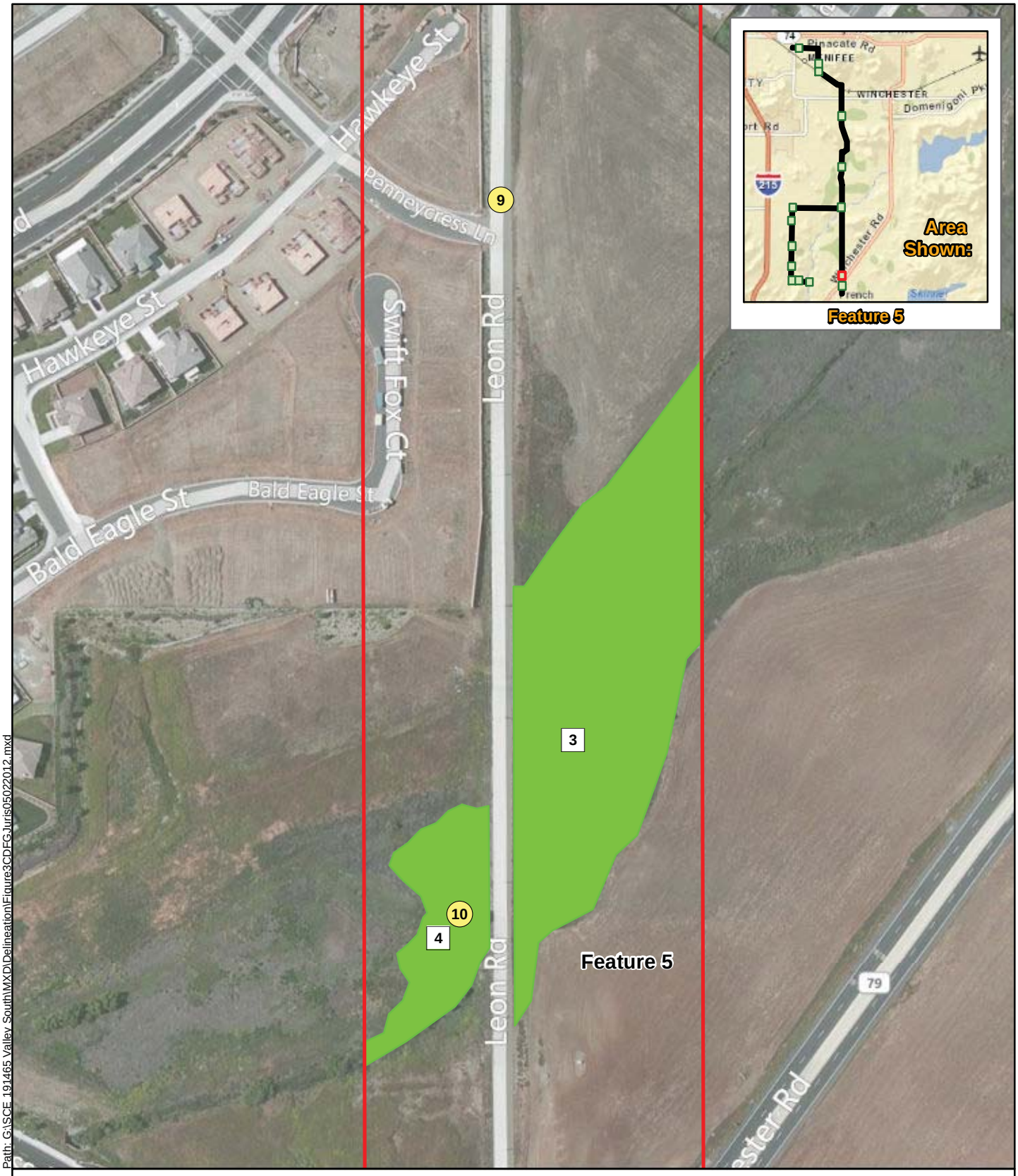
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 6 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
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- Areas of Non Jurisdiction
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- # Wetland Pit

Source: Bing Maps Aerial Imagery

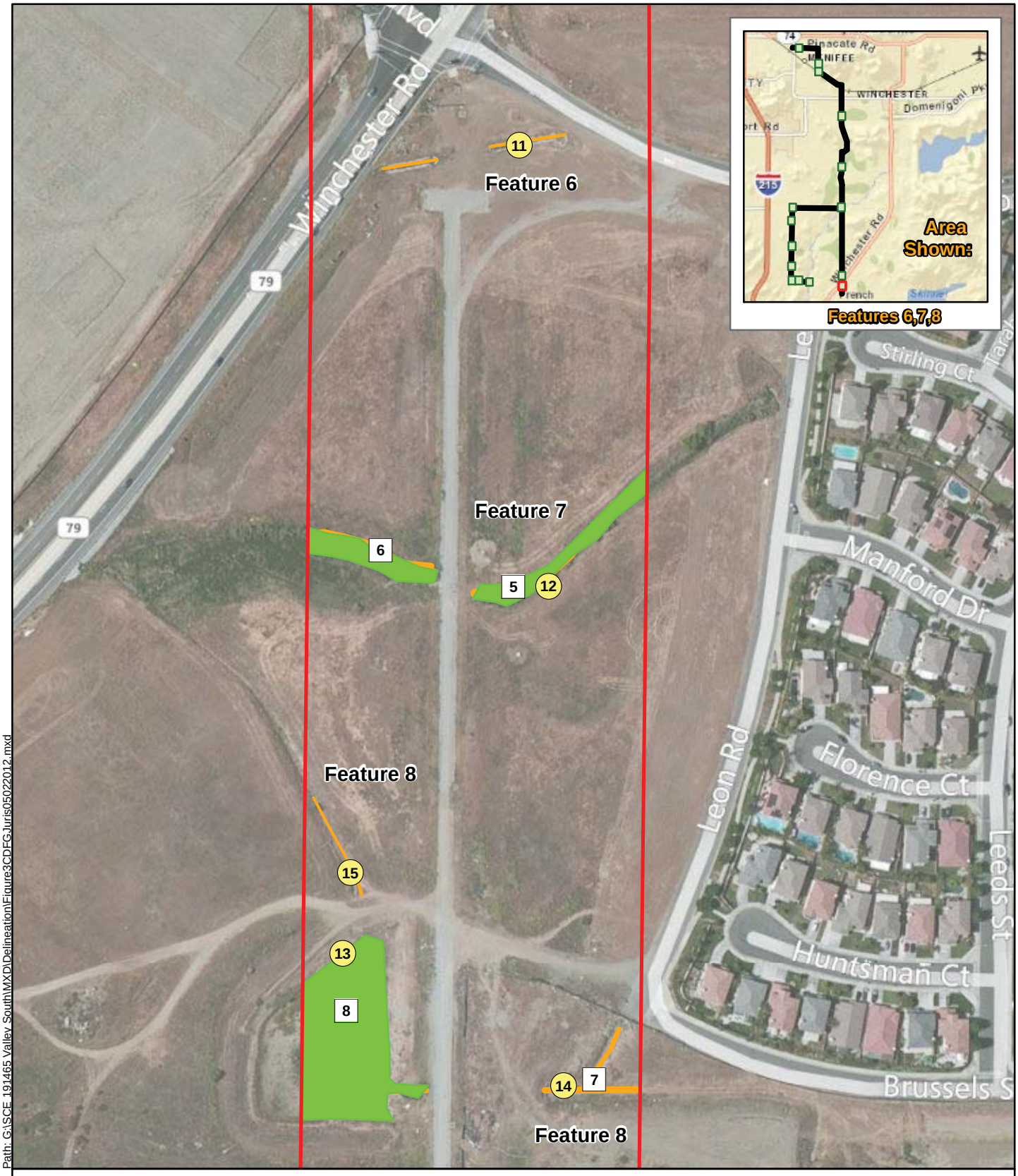
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 7 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

Source: Bing Maps Aerial Imagery

N

0 100 200 400 Feet

Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 8 of 15

Figure 3

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
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- # Photo Locations
- # Wetland Pit

Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

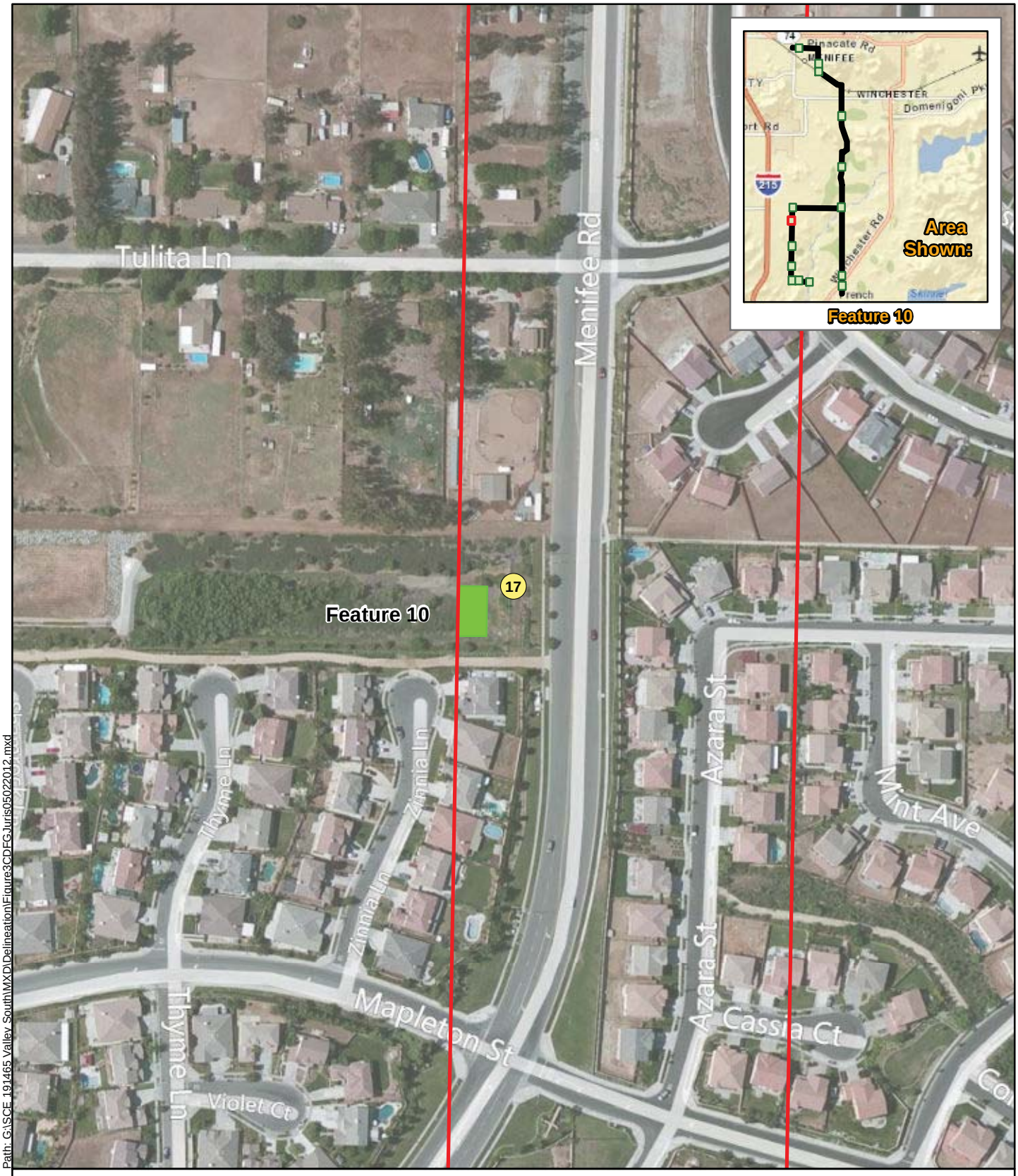
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Sheet 9 of 15
Figure 3

TRC

Source: Bing Maps Aerial Imagery



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations (#)
- Wetland Pit (#)

Source: Bing Maps Aerial Imagery

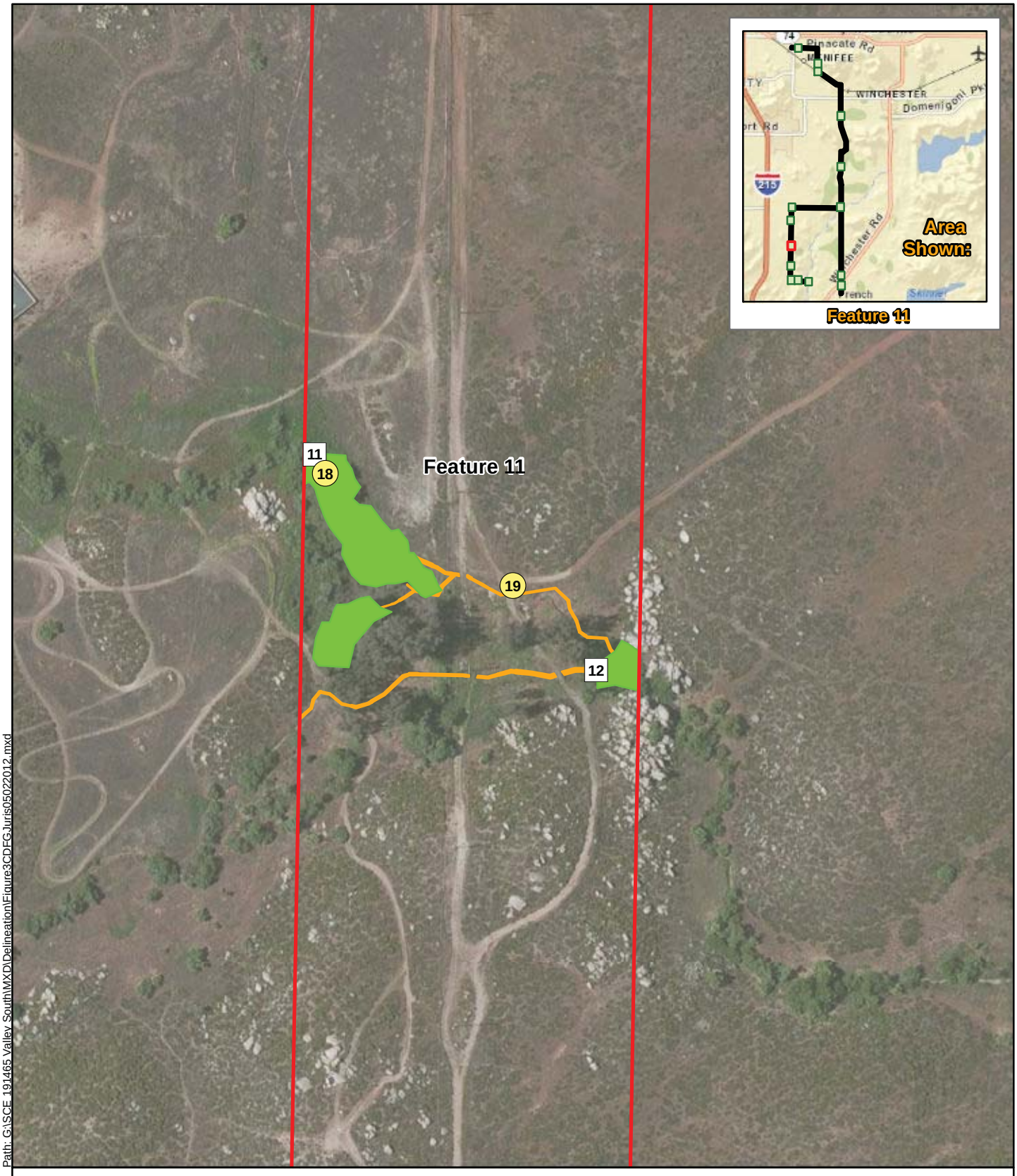
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 10 of 15
Figure 3

TRC



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Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

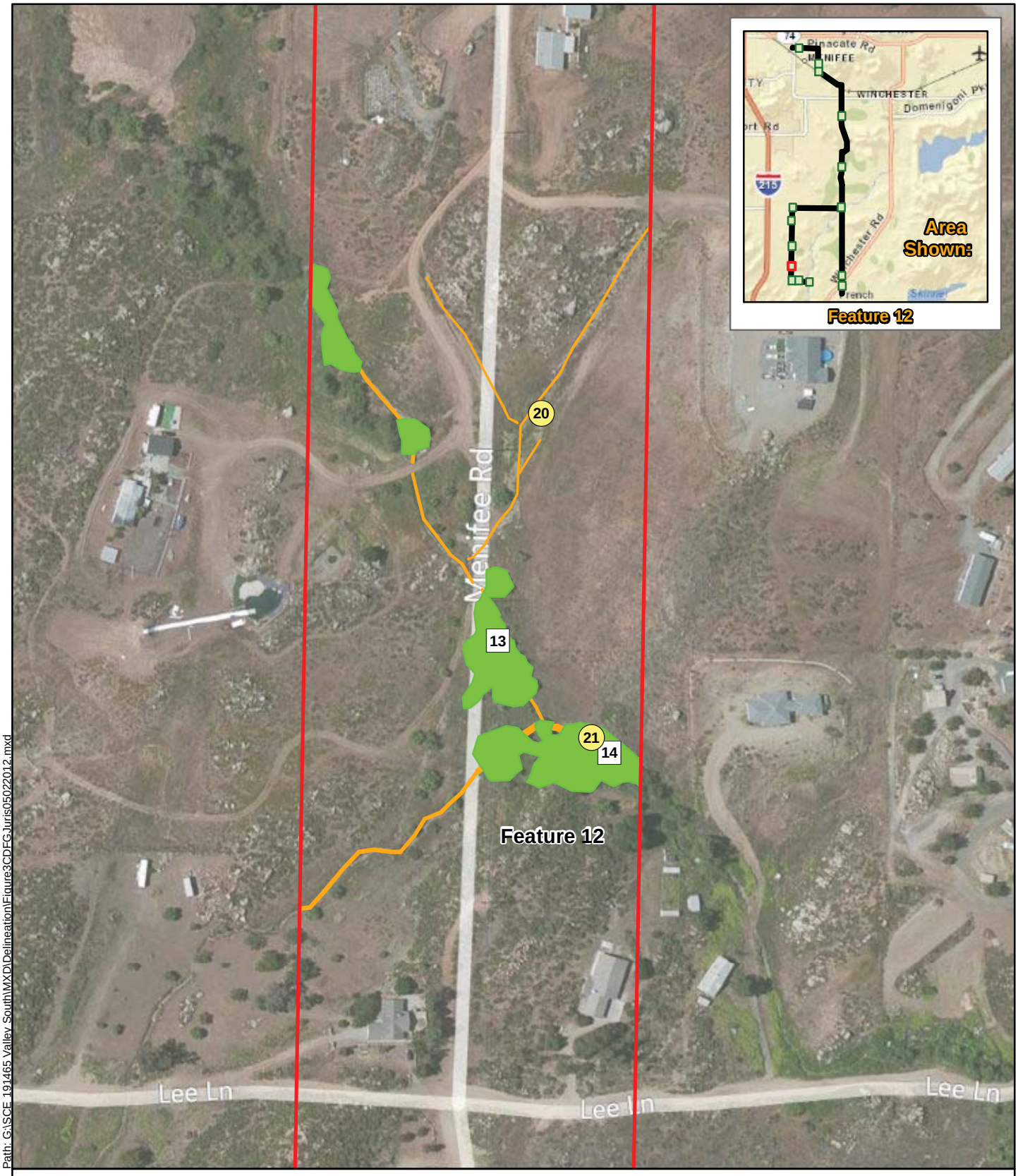
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0 100 200 400 Feet

Sheet 11 of 15
Figure 3

TRC

Source: Bing Maps Aerial Imagery



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

Source: Bing Maps Aerial Imagery

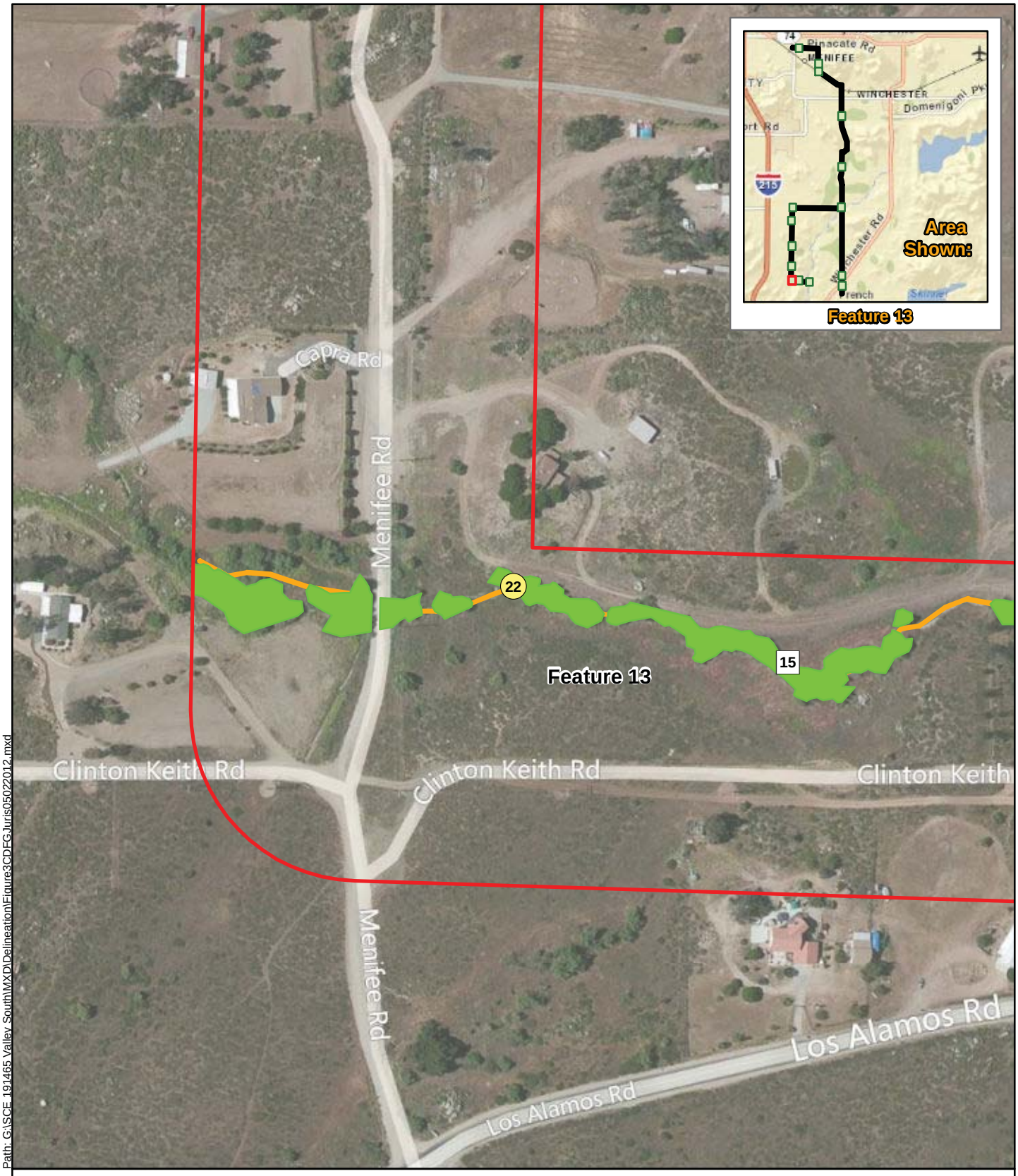
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 12 of 15
Figure 3

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- # Photo Locations
- # Wetland Pit

Source: Bing Maps Aerial Imagery

N

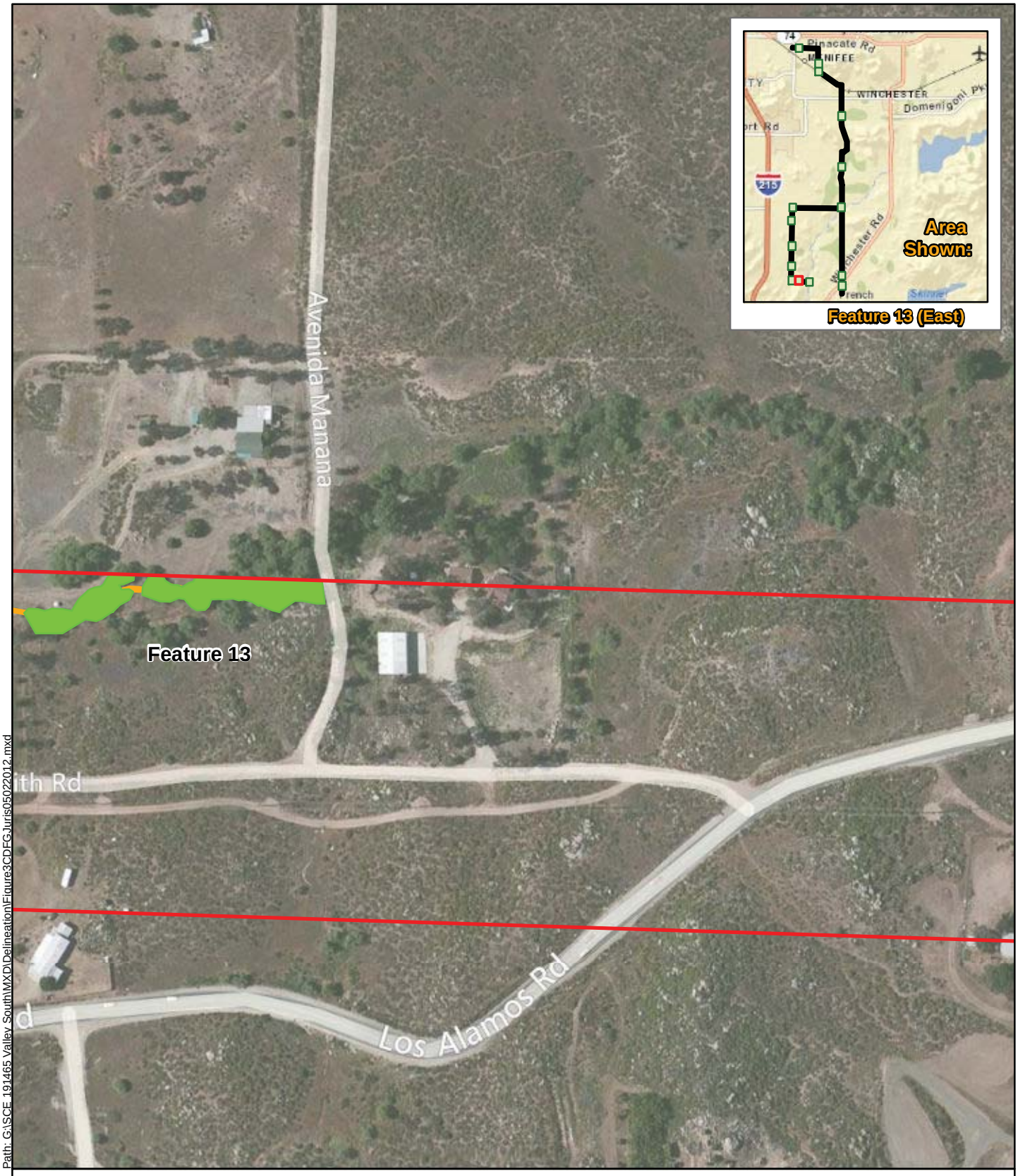
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Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

Sheet 13 of 15

Figure 3

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations (#)
- Wetland Pit (#)

Source: Bing Maps Aerial Imagery

Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

N

0 100 200 400 Feet

Sheet 14 of 15
Figure 3

TRC



Path: G:\SCE 191465 Valley South\MXD\Delineation\Figure3CDFGJuris05022012.mxd

Legend

- 500ft Survey Corridor
- CDFG Riparian
- CDFG Unvegetated
- Areas of Non Jurisdiction
- Photo Locations (#)
- Wetland Pit (#)

Southern California Edison
Valley South Subtransmission Project
CDFG Jurisdiction Map

N

0 100 200 400 Feet

Sheet 15 of 15
Figure 3

TRC

Source: Bing Maps Aerial Imagery

APPENDIX A

SOIL TYPES

Appendix A: Soil Types

Map Code	Name and Slope	Drainage Class	Slope designation	Hydric Status
AuC	Auld clay, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
AyF	Auld cobbly clay, 8 to 50 percent slopes	Well drained	Severe	Not hydric
BfC	Bosanko clay, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
BfD	Bosanko clay, 8 to 15 percent slopes	Well drained	Moderate	Not hydric
BhA	Buchenau loam, slightly saline-alkali, 0 to 2 percent slopes	Moderately well drained	Slight	Not hydric
BhC	Buchenau loam, slightly saline-alkali, 2 to 8 percent slopes	Moderately well drained	Moderate	Not hydric
BkC2	Buchenau silt loam, 2 to 8 percent slopes, eroded	Moderately well drained	Moderate	Not hydric
BxC2	Buren loam, deep, 2 to 8 percent slopes, eroded	Moderately well drained	Moderate	Not hydric
CaC2	Cajalco fine sandy loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
CaD2	Cajalco fine sandy loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
CbF2	Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded	Well drained	Severe	Not hydric
Ce	Chino silt loam, drained	Somewhat poorly drained	Slight	Not hydric
Cf	Chino silt loam, drained, saline-alkali	Somewhat poorly drained	Slight	Not hydric
ChC	Cieneba sandy loam, 5 to 8 percent slopes	Somewhat excessively drained	Moderate	Not hydric
ChD2	Cieneba sandy loam, 8 to 15 percent slopes, eroded	Somewhat excessively drained	Moderate	Not hydric
ChF2	Cieneba sandy loam, 15 to 50 percent slopes, eroded	Somewhat excessively drained	Severe	Not hydric
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded	Somewhat excessively drained	Severe	Not hydric
Ds2	Domino fine sandy loam, eroded	Moderately well drained	Slight	Not hydric

Appendix A: Soil Types

Map Code	Name and Slope	Drainage Class	Slope designation	Hydric Status
Dt	Domino fine sandy loam, saline-alkali	Moderately well drained	Slight	Not hydric
Du	Domino silt loam	Moderately well drained	Slight	Not hydric
Dv	Domino silt loam, saline-alkali	Moderately well drained	Slight	Partially hydric
Dw	Domino silt loam, strongly saline-alkali	Moderately well drained	Slight	Partially hydric
EcC2	Escondido fine sandy loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
EcD2	Escondido fine sandy loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
EnA	Exeter sandy loam, 0 to 2 percent slopes	Well drained	Slight	Not hydric
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
EpA	Exeter sandy loam, deep, 0 to 2 percent slopes	Well drained	Slight	Not hydric
EwB	Exeter very fine sandy loam, 0 to 5 percent slopes	Well drained	Moderate	Not hydric
FaD2	Fallbrook sandy loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
FkD2	Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
FwE2	Friant fine sandy loam, 5 to 25 percent slopes, eroded	Well drained	Severe	Not hydric
GtA	Grangeville fine sandy loam, drained, 0 to 2 percent slopes	Moderately well drained	Slight	Not hydric
GyA	Greenfield sandy loam, 0 to 2 percent slopes	Well drained	Slight	Not hydric
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
HcA	Hanford coarse sandy loam, 0 to 2 percent slopes	Somewhat excessively drained	Slight	Not hydric
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
HnC	Honcut sandy loam, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
HuC2	Honcut loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric

Appendix A: Soil Types

Map Code	Name and Slope	Drainage Class	Slope designation	Hydric Status
LaC	Las Posas loam, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
LaC2	Las Posas loam, 5 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
LaD2	Las Posas loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
LaE3	Las Posas loam, 8 to 25 percent slopes, severely eroded	Well drained	Severe	Not hydric
LkF3	Las Posas rocky loam, 15 to 50 percent slopes, severely eroded	Well drained	Severe	Not hydric
MmB	Monserate sandy loam, 0 to 5 percent slopes	Well drained	Moderate	Not hydric
MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
MmD2	Monserate sandy loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
MmE3	Monserate sandy loam, 15 to 25 percent slopes, severely eroded	Well drained	Severe	Not hydric
MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
PaA	Pachappa fine sandy loam, 0 to 2 percent slopes	Well drained	Slight	Not hydric
PaC2	Pachappa fine sandy loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
PoC	Porterville clay, 0 to 8 percent slopes	Well drained	Slight	Not hydric
PsC	Porterville clay, moderately deep, 2 to 8 percent slope s	Well drained	Moderate	Not hydric
PtB	Porterville clay, moderately deep, slightly saline-alkali, 0 to 5 percent slopes	Well drained	Slight	Not hydric
PvD2	Porterville gravelly clay, moderately deep, 2 to 15 per cent slopes, eroded	Well drained	Moderate	Not hydric
RaA	Ramona sandy loam, 0 to 2 percent slopes	Well drained	Slight	Not hydric

Appendix A: Soil Types

Map Code	Name and Slope	Drainage Class	Slope designation	Hydric Status
RaB3	Ramona sandy loam, 0 to 5 percent slopes, severely eroded	Well drained	Moderate	Not hydric
RtF	Rockland	Somewhat excessively drained	Severe	Not hydric
VeC2	Vallecitos loam, thick solum variant, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
VeD2	Vallecitos loam, thick solum variant, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
VsC	Vista coarse sandy loam, 2 to 8 percent slopes	Well drained	Moderate	Not hydric
VsD2	Vista coarse sandy loam, 8 to 15 percent slopes, eroded	Well drained	Severe	Not hydric
VtF2	Vista rocky coarse sandy loam, 2 to 35 percent slopes, eroded	Well drained	Severe	Not hydric
Wg	Willows silty clay, saline-alkali	Poorly drained	Slight	Not hydric
WyC2	Wyman loam, 2 to 8 percent slopes, eroded	Well drained	Moderate	Not hydric
YbC	Yokohl loam, 2 to 8 percent slopes	Well drained	Moderate	Partially hydric

APPENDIX B

SITE PHOTOGAPHS

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 1: View of Feature 1 looking southwest. Feature 1 is an ephemeral drainage located in an active agricultural field.
 Taken on April 10, 2012	Photo 2: View of Feature 2 flood control basin looking north. Upland vegetation dominated the basin.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 3: View of Feature 2 outfall drainage near the flood control basin, looking south. The outfall drainage in this area was dominated by upland vegetation.
 Taken on April 10, 2012	Photo 4: View of Feature 2 outfall drainage near the Matthews Road, looking north. The outfall drainage in this area was dominated by mulefat.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 5: View of the Domenigoni Channel looking east. The channel appeared to be maintained and was wet at the time of the survey.
 Taken on April 10, 2012	Photo 6: View of an agricultural ditch associated with Feature 3. Portions of the ditch were wet at the time of the survey.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 7: View of an agricultural stock pond associated with Feature 3. The pond was dominated by non-native grasses and eucalyptus.
 Taken on April 19, 2012	Photo 8: View of Feature 4 facing east. Feature 4 is a small ephemeral drainage located at the edge of fallow and dominated by ruderal vegetation.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 19, 2012	Photo 9: View of Feature 5 east of Old Leon Road, facing south. Vegetation is dominated by cattails and bulrush.
 Taken on April 19, 2012	Photo 10: View of Feature 5 west of Old Leon Road, facing east. Vegetation is dominated by tamarisk and arroyo willow.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 19, 2012	Photo 11: View of Feature 6 facing east. Feature 6 is a 6-foot wide v-ditch with only thin patchy soils soils.
 Taken on April 10, 2012	Photo 12: View of Feature 7 facing east. Feature 7 is wetland fed by nuisance flows from a residential community east of the survey corridor.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 13: View of Feature 8 flood control basin looking southeast. The flood control basin was dominated by hydrophytes.
 Taken on April 10, 2012	Photo 14: View of Feature 8 inflow drainage looking east. The inflow drainage in this area was dominated by upland vegetation.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 10, 2012	Photo 15: View of Feature 8 outflow drainage looking north. The outflow drainage was dominated by upland ruderal vegetation.
 Taken on April 4, 2012	Photo 16: View of Feature 9 facing east. The pool is located within critical habitat for spreading navarretia.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 19, 2012	Photo 17: View of Feature 10 facing west. Feature 10 is a large flood control basin dominated by cattails.
 Taken on April 19, 2012.	Photo 18: View of Feature 11 facing north. In this area the drainage is dominated by southern willow scrub.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on April 19, 2012.	Photo 19: View of Feature 11 facing southeast. In this area the drainage is dominated by non-native bromes and eucalyptus.
 Taken on April 19, 2012.	Photo 20: View of Feature 12 facing north. In this area the drainage system was ephemeral and dominated upland ruderal vegetation.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations



Taken on April 19, 2012

Photo 21:
View of Feature 12 facing north. In this area the drainage system was deeply incised and dominated riparian vegetation.



Taken on April 24, 2012

Photo 22:
View of Feature 13 facing east. Drainage was dominated by riparian vegetation and had extremely sandy soils.

Appendix B: Site Photographs
Refer to Figure 2 for Photo locations

 Taken on May 8, 2012	Photo 23: View of Feature 14. Drainage had an intermittent OHWM through most of the survey area.
 Taken on April 24, 2012	Photo 24: View of Warm Springs Creek facing north. Drainage was dominated by riparian vegetation.

APPENDIX C

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/10/12

Applicant/Owner: | State: CA | Sampling Point: 1

Investigator(s): T. Kegel | Section, Township, Range: T5S,R2W,sec19

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.722 N | Long: 117.135 W | Datum: NAD 83

Soil Map Unit Name: GyA | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	80	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1. *Medicago lupulina*	20	Yes	FAC
2. *Eriogonum fasciculatum*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	25 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	105 (A)		245 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7YR 5/3	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 2

Investigator(s): T. Kegel | Section, Township, Range: T5S,R2W,sec31

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.696 N | Long: 117.120 W | Datum: NAD 83

Soil Map Unit Name: Dv | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Typha latifolia*	75	Yes	OBL
2. *Tamarisk ramosissima*	25	Yes	FAC
3.			
4.			
5.			
Total Cover:	100%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species		x 2 =	0
FAC species	25	x 3 =	75
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		150 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2								Peat
2-16	10YR 3/2	75	10YR 3/6	25	C	RC	Clay	
16-18	2.5Y 3/3	100					Gravelly Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Gravel Rocks

Depth (inches): 18

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 2

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 3

Investigator(s): T. Kegel | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.601 N | Long: 117.118 W | Datum: NAD 83

Soil Map Unit Name: Cf | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area**
Wetland Hydrology Present?	Yes (●)	No ( )	**within a Wetland?** **Yes** (●) **No** ( )

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Scripus californicus*	50	Yes	OBL
2.			
3.			
4.			
Total Cover:	50 %		
Sapling/Shrub Stratum			
1. *Scripus californicus*	40	Yes	OBL
2. *Epilobium ciliatum*	20	Yes	OBL
3.			
4.			
5.			
Total Cover:	60 %		
Herb Stratum			
1. *Epilobium ciliatum*	10	Yes	OBL
2. *Rumex crispus*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	120	x 1 =	120
FACW species		x 2 =	0
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	130 (A)		150 (B)

Prevalence Index = B/A = 1.15

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 2/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 4

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.600 N | Long: 117.119 W | Datum: NAD 83

Soil Map Unit Name: Cf | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	100	Yes	FACW
2.			
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Sonchus oleraceus*	5	Yes	NI
2. *Rumex crispus*	5	Yes	FAC
3. *Malvella leprosa*	5	Yes	FAC*
4.			
5.			
6.			
7.			
8.			
Total Cover:	15 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	100	x 2 =	200
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	115 (A)		255 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 2/2	97	Gley 2 2.5/10B	3	RM	M	Loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [x] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (•) No ( ) Depth (inches): 0

Water Table Present? Yes ( ) No (•) Depth (inches):

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): 2

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/10/12

Applicant/Owner: | State: CA | Sampling Point: 5

Investigator(s): T. Kegel | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.596 N | Long: 117.118 W | Datum: NAD 83

Soil Map Unit Name: MmC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rumex crispus*	25	Yes	FACW*
2. *Anagallis arvensis*	10	Yes	FAC
3. *Polypogon monspeliensis*	5	No	FACW*
4. *Cyperus eragrostis*	5	No	FACW
5. *Epilobium ciliatum*	5	No	FACW
6.			
7.			
8.			
Total Cover:	50 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	40	x 2 =	80
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	50 (A)		110 (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7YR 3/3	98	5YR 4/4	2	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 6

Investigator(s): T. Kegel | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.596 N | Long: 117.119 W | Datum: NAD 83

Soil Map Unit Name: MmC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarisk ramosissima*	25	Yes	FAC
2.			
3.			
4.			
Total Cover:	25 %		
Sapling/Shrub Stratum			
1. *Typha latifolia*	100	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	100%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species		x 2 =	0
FAC species	25	x 3 =	75
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	125 (A)		175 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2								Peat
2-16	10YR 3/2	75	10YR 3/6	25	C	RC	Clay	
16-18	2.5Y 3/3	100					Gravelly Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Gravel Rocks

Depth (inches): 18

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 2

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/10/12

Applicant/Owner: | State: CA | Sampling Point: 7

Investigator(s): T. Kegel | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.594 N | Long: 117.118 W | Datum: NAD 83

Soil Map Unit Name: MmB | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha latifolia*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-3					C	M		Peat/Over 80% organic
3-18	2.5Y 3/2	90%	5YR 5/4	10	C	M	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [x] Sediment Deposits (B2) (**Riverine**)
- [x] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 16

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/10/12

Applicant/Owner: | State: CA | Sampling Point: 8

Investigator(s): T. Kegel | Section, Township, Range: T7S,R2W,sec5

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.594 N | Long: 117.119 W | Datum: NAD 83

Soil Map Unit Name: MmC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha latifolia*	25	Yes	OBL
2. *Cyperus eragrostis*	5	No	FACW*
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	30 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	5	x 2 =	10
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	30 (A)		35 (B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-5	7YR 5/4	100					Clay	
5-18	7.5yr 5/4	75	Gley 1 5/5G	20	RM	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 16

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 9

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec24

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.642 N | Long: 117.152 W | Datum: NAD 83

Soil Map Unit Name: CaC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Epilobium ciliatum*	10	No	FACW
2. *Rumex salicifolius*	15	No	OBL
3. *Polypogon monspeliensis*	20	Yes	FACW*
4. *Bromus rubens*	10	No	NI
5. *Lolium multiflorum*	10	No	FAC*
6.			
7.			
8.			
Total Cover:	65 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	30	x 2 =	60
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	65 (A)		155 (B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 4/2	98	7.5YR 2.5/1	2	RM	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 10

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec24

Landform (hillslope, terrace, etc.): Seasonal Pool | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.642 N | Long: 117.154 W | Datum: NAD 83

Soil Map Unit Name: LaC | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Epilobium ciliatum*	60	Yes	FACW
2. *Eleocharis parishii*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	80 (A)		160 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 3/1	75	5YR 4/6	25	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 11

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec26

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.620 N | Long: 117.155 W | Datum: NAD 83

Soil Map Unit Name: LaE3 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	100	Yes	FACW
2.			
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Conium maculatum*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	50 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	150	x 2 =	300
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	150 (A)		300 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	7.5YR 2.5/2	100					sandy loam	
4-18	7.5YR 3/4	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 12

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec25

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.619 N | Long: 117.153 W | Datum: NAD 83

Soil Map Unit Name: HuC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	80	Yes	FACW
2. *Eucalyptus sp.*	20	Yes	UPL
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Melilotus albus*	5	Yes	FACU
2. *Anemopsis californica*	2	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	7 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species	5	x 4 =	20
UPL species	20	x 5 =	100
Column Totals:	107 (A)		282 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 2/1	100					Loam	25% Organic
6-18	10YR 2/1	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches): 7

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 13

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec36

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.607 N | Long: 117.154 W | Datum: NAD 83

Soil Map Unit Name: HuC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	100	Yes	FACW
2.			
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Conium maculatum*	20	Yes	FACW
2. *Melilotus albus*	5	No	FACU
3. *Ambrosia psilostachya*	1	No	FAC
4. *Gnaphalium luteo-album*	5	No	NI
5.			
6.			
7.			
8.			
Total Cover:	31 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	120	x 2 =	240
FAC species	1	x 3 =	3
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	131 (A)		288 (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-5	7.5YR 3/3	100					Sandy Loam	
5-18	7.5YR 3/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/18/12

Applicant/Owner: | State: CA | Sampling Point: 14

Investigator(s): T. Kegel, S. Underbrink | Section, Township, Range: T6S,R3W,sec36

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.606 N | Long: 117.153 W | Datum: NAD 83

Soil Map Unit Name: HuC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	75	Yes	FAC*
2. *Salix lasiolepis*	25	Yes	FACW
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	25	x 2 =	50
FAC species	75	x 3 =	225
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		275 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Incised 5 feet

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7.5YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [x] Sediment Deposits (B2) (**Riverine**)
- [x] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (•) No ( ) Depth (inches): 0

Water Table Present? Yes (•) No ( ) Depth (inches):

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): 0

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/24/12

Applicant/Owner: | State: CA | Sampling Point: 15

Investigator(s): T. Kegel, K. Sernka | Section, Township, Range: T7S,R3W,sec1

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.598 N | Long: 117.152 W | Datum: NAD 83

Soil Map Unit Name: GyC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	80	Yes	FACW
2.			
3.			
4.			
Total Cover:	80 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Bromus hordeaceus*	20	Yes	UPL
2. *Elymus triticoides*	20	Yes	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	40 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species	20	x 5 =	100
Column Totals:	120 (A)		320 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Incised 5 feet

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	7.5YR 4/3	100					Sand	
8-18	10YR 2/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/24/12

Applicant/Owner: | State: CA | Sampling Point: 16

Investigator(s): T. Kegel | Section, Township, Range: T7S,R3W,sec1

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): None | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.598 N | Long: 117.144 W | Datum: NAD 83

Soil Map Unit Name: GyC2 | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	30	Yes	FACW
2.			
3.			
4.			
Total Cover:	30 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Muhlenbergia rigens*	20	Yes	FACW
2. *Ambrosia psilostachya*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	40 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	70 (A)		160 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Incised 5 feet

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7.5YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SCE Valley South | City/County: Riverside County | Sampling Date: 04/24/12

Applicant/Owner: | State: CA | Sampling Point: 17

Investigator(s): T. Kegel, K. Sernka | Section, Township, Range: T7S,R3W,sec1

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): Concave | Slope (%):

Subregion (LRR): C - Mediterranean California | Lat: 33.598 N | Long: 117.141 W | Datum: NAD 83

Soil Map Unit Name: HnC | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	40	Yes	FACW
2.			
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1. *Scirpus maritimus*	5	Yes	OBL
2. *Artemisia douglasiana*	20	Yes	FACW
3.			
4.			
5.			
Total Cover:	25 %		
Herb Stratum			
1. *Sisyrinchium bellum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	60	x 2 =	120
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	75 (A)		155 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Incised 5 feet

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	7.5YR 2.5/1	100					Sandy loam	
8-18	2.5Y 3/1	95	5YR 5/8	5	C	M	Loam	Hydrogen Sulfide Odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	0
Water Table Present?	Yes ◉ No ○	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B:
MSHCP Narrow Endemic and Criteria Area Plant Species Survey Report

MSHCP Narrow Endemic and Criteria Area Plant Species Survey Report

Southern California Edison
Valley South Subtransmission Project

Riverside, California
USGS Bachelor Mountain, Murrieta, Romoland, and Winchester Quadrangles

September 11, 2012

Prepared For:

Southern California Edison
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Acronyms List

Acronym	Definition
CAPS	Criteria Area Plant Species
CDFG	California Department of Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSS	Coastal sage scrub
DBESP	Determination of Biological Equivalent or Superior Preservation
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
kV	kilovolt
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
NCCP	Natural Communities Conservation Plan
NEPS	Narrow Endemic Plant Species
NRCS	Natural Resources Conservation Service
Project survey area	250 foot buffer surrounding the Preferred Route and Alternative Route 1
Proposed Project	Valley South Subtransmission Project
SCE	Southern California Edison

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1.0 INTRODUCTION

On behalf of the Southern California Edison (SCE), a special status plant species survey was conducted by TRC for the proposed Valley South Subtransmission Project (Proposed Project), which is located in Riverside County, California (see Figure 1, Vicinity map). The Proposed Project occurs within the area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which was developed as a large-scale planning mechanism pursuant to the Natural Communities Conservation Planning Act of 1991. Under the MSHCP, survey areas for specific Narrow Endemic Plant Species (NEPS) and Criteria Area Plant Species (CAPS) have been delineated and the Proposed Project occurs within designated Areas 3 and 4. The purpose of this survey was to determine if the Proposed Project area supports suitable habitat for and any populations of Area 3 and 4 NEPS and/or CAPS, pursuant to Sections 6.1.3 and 6.3.2, respectively, of the MSHCP.

This assessment provides an inventory of all plant species occurring within the Proposed Project area and includes an analysis and discussion of the habitat conditions for NEPS and CAPS species based on field survey.

1.1 PROJECT OVERVIEW

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12 kV Substation. The proposed Valley-Triton 115 kV subtransmission line would be approximately 12 miles long.
- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system
- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

1.2 REGULATORY BACKGROUND

The Proposed Project is in the coverage area of the MSHCP, a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) and Natural Communities Conservation Plan (NCCP) focusing on conservation of species and their associated habitats in western Riverside County.

The NCCP recognizes "coverage" of species under the planning process as anticipated adequate, long-term conservation of those species under full implementation of the particular local plan, which is also designed to account for human development. The Western Riverside County MSHCP covers 146 species, including many locally sensitive and special status species. Among

these, 106 are adequately conserved with no additional surveys or conservation required. The remaining 40 species, including 6 riparian/riverine species, 14 NEPS, 13 CAPS, 3 amphibians, the burrowing owl, and 3 mammals, are covered with conditional survey requirements. Maps of the aforementioned designated survey areas for these species are provided in Section 6.0 of the MSHCP. The areas are also depicted here in Figure 2, MSHCP Survey Areas. Species-specific surveys are required if a project falls within a survey area and if species-specific habitat conditions are present onsite. Based on the location of the Proposed Project with respect to the survey areas, it was determined that a survey for the NEPS (MSHCP Section 6.1.3) and CAPS (MSHCP Section 6.3.2) identified in Table 1 was required. If any of the species are present within their respective Criteria Areas, avoidance of 90 percent of those portions of the property that provide for long-term conservation value for the species is required until the MSHCP has met the species-specific conservation objectives (MSHCP, Table 9-2). If 90 percent avoidance cannot be achieved, a Determination of Biological Equivalent or Superior Preservation (DBESP) analysis is required.

Table 1: MSHCP Narrow Endemic and Criteria Area Plants

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Narrow Endemic Species				
Ambrosia pumila	San Diego ambrosia	List 1B.1 FE 7/02	Chaparral , Coastal scrub, Valley and foothill grassland, Vernal pools/often in disturbed areas, sometimes alkaline 20 – 415 m	Apr-Oct
Allium marvinii	Yucaipa Onion	List 1B.1	Chaparral (clay openings) 760 – 1,065 m	Apr-May
Allium munzii	Munz's Onion	List 1B.1 ST 1/90 FE 10/98	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland /mesic, clay 300 – 1,070 m	Mar-May
Arabis johnstonii	Johnston's Rockcress	List 1B.2	Chaparral , Lower montane coniferous forest/often on eroded clay 1350 – 2,150 m	Feb-Jun
Calochortus palmeri var. munzii	Munz's Mariposa lily	List 1B.2 CA-Endemic	Chaparral , Lower montane coniferous forest 1200 – 2,200 m	Jun-Jul
Dodecahema leptoceras	Slender-Horned Spine Flower	List 1B.1 SE 1/82 FE 9/87	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan)/sandy 200 – 760 m	Apr-Jun
Dudleya multicaulis	Many-Stemmed Dudleya	List 1B.2	Chaparral, Coastal Scrub, Valley & Foothill grassland/often clay 15 – 790 m	Apr-Jul

Table 1 (cont.): MSHCP Narrow Endemic and Criteria Area Plants

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Galium angustifolium ssp. jacinticum	San Jacinto Mountains Bedstraw	List 1B.3 CA-Endemic	Lower montane coniferous forest 1,350 – 2,100 m	Jun-Aug
Navarretia fossalis	Spreading Navarretia	List 1B.1 FE 10/98	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools	Apr-Jun
Orcuttia californica	California Orcutt Grass	List 1B.1 SE 9/79 FE 8/93	Vernal pools 15 – 660 m	Apr-Aug
Phacelia stellaris	Brands Phacelia	List 1B.1 FC	Coastal dunes, Coastal scrub 1 – 400 m	Mar-Jun
Satureja chandleri	San Miguel Savory	List 1B.2	Chaparral , Cismontane woodland, Coastal scrub Riparian woodland, Valley and foothill grassland/rocky, gabbroic or metavolcanic 120 – 1,075 m	Mar-Jul
Sibaropsis hammittii	Hammitt's Clay-Cress	List 1B.2	Chaparral (openings), Valley and foothill grassland/clay 720 – 1,065 m	Mar-Apr
Trichocoronis wrightii var. wrightii	Wright's Trichocoronis	List 2.1	Meadows and seeps, Marshes and swamps, Riparian forest, Vernal pools/alkaline 5 – 435 m	May- Sep
Criteria Area Species				
Atriplex coronata var. notatior	San Jacinto Valley Crownscale	List 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley & Foothill grassland/alkaline or clay 3 – 460 m	Mar-Oct
Atriplex parishii	Parish's Brittlescale	List 1B.1	Chenopod scrub, Playas, Vernal pools 25 – 1,900 m	Jun-Oct
Atriplex serenana var. davidsonii	Davidson's Saltscale	List 1B.2	Coastal bluff scrub, Coastal scrub/alkaline 10 – 200 m	Apr-Oct
Berberis nevinii	Nevin's Barberry	List 1B.1 SE 01/87 FE 10/13/98	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub/sandy or gravelly 295 – 825 m	Mar-Apr

Table 1 (cont.): MSHCP Narrow Endemic and Criteria Area Plants

Scientific Name	Common Name	Status	Habitat/Elevation	Blooming Period
Brodiaea filifolia	Thread-Leaved Brodiaea	1B.1 SE 01/82 FT 10/13/98	Chaparral, cismontane woodland, coastal scrub, playas, Valley & Foothill 25 – 860 m	Mar-Jun
California macrophyllum	Round-Leaved Filaree	List 1B.1	Cismontane woodland, Valley & Foothill grassland/clay 15 – 1,200 m	Mar-May
Ceanothus ophiochilus	Vail Lake Ceanothus	List 1B.1 SE 1/94 FT 10/98	Chaparral(gabbroic or pyroxenite-rich outcrops) 580 – 1,065 m	Feb-Mar
Centromadia pungens	Smooth Tarplant	List 1B.1	Chenopod scrub, meadows, playas, riparian woodland, Valley & Foothill grassland 0 – 480 m	Apr-Sept
Lasthenia glabrata ssp. coulteri	Coulter's Goldfields	List 1B.1	Marshes and swamps(coastal salt), Playas, Vernal pools 1 – 1,220 m	Feb-Jun
Lepechinia cardiophylla	Heart-Leaved Pitcher Sage	List 1B.2	Closed-cone coniferous forest, Chaparral, Cismontane woodland 520 – 1,370 m	Apr-Jun
Myosurus minimus	Little Mousetail	List 3.1	Valley and foothill grassland, Vernal pools (alkaline) 20 – 640 m	Mar-Jun
Nama stenocarpum	Mud Nama	List 2.2	Marshes and swamps (lake margins, riverbanks) 5 – 500 m	Jan-Jul
Navarretia prostrata	Prostrate Navarretia	List 1B.1	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools/mesic 125 – 700 m	Apr-Jul
Source: CNPS, 2012; MSHCP, 2003				

California Department of Fish and Game

SE	State listed, endangered
ST	State listed, threatened
SR	State listed, rare

U.S. Fish and Wildlife Service

FE	Federally listed, endangered
FT	Federally listed, threatened
FC	Federal candidate species

California Native Plant Society

List 1B	Rare, threatened, or endangered in California and elsewhere
List 2	Rare, threatened, or endangered in California but more common elsewhere
List 4	Limited distribution – a watch list

2.0 METHODS

2.1 LITERATURE SEARCH AND SURVEY

Prior to field surveys, records from the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB) (CNDDB, 2012) and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS, 2012) were reviewed for potential occurrence of any sensitive species or habitats within the quadrangles containing the Proposed Project. In addition, species identified by the MSHCP as NEPS or CAPS species were included in the assessment. A list of the CNDDB, CNPS, NEPS, and CAPS rare plants occurring within the vicinity of the Proposed Project are included as Appendix A.

Field aerial photograph maps at a scale of 1:2400 (1 inch = 200 feet) were created for the entire Proposed Project area prior to field visits. These included known sensitive species points from CNDDB (2012) data and vegetation communities that were mapped during 2012 assessment surveys.

Detailed mapping of vegetation types (i.e., communities) was completed by TRC biologists within the Project survey area, which is defined as the area within a 250-foot buffer surrounding the Preferred Route (Alternative 1) and Alternative Route 2 (total width 500 feet), during the spring of 2012 to provide a context for all biological studies. Mapped vegetation polygons, in conjunction with information on soils, topography, and land uses, were used to define plant habitats and identify focal survey areas, as discussed below.

Between April 3, 2012 and July 16, 2012, TRC biologists conducted a focused rare plant survey within the Project survey area. This botanical survey was conducted following the CDFG Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG, 2009) and the CNPS Botanical Survey Guidelines (CNPS, 2001). The survey was conducted over the course of several months to cover the various blooming seasons of all potentially occurring rare plant species. Areas with potential habitat for special status plant species (i.e., mesic sites, rocky outcrops, clay or alkaline soils, etc.) were surveyed on foot. These areas are identified on Figure 3, Rare Plant Habitat. The areas were surveyed in such a pattern and spacing of transects (linear or irregular) as to allow visual inspection of all areas appropriate to the detectability of anticipated special status species. This pattern varied with topography and density of vegetation. All plant habitats and micro-habitats in the survey area were represented. Areas with less potential to support rare plants (e.g., highly disturbed areas such as agriculture fields and recently disked sites) were surveyed using binoculars. Survey date, times, conditions, and personnel are summarized in Table 2. Survey personnel qualifications are given below.

Table 2: Plant Survey Effort, Conditions, and Personnel

Date	Survey Type	Surveyors	Seasonal Precipitation to Date
April 3, 2012	Assessment Survey for Project survey area	T. Kegel J. Lovio	3.36 inches

Table 2 (cont.): Effort, Conditions, and Personnel

Date	Survey Type	Surveyors	Seasonal Precipitation to Date
April 4, 2012	Assessment Survey for Project survey area	T. Kegel J. Lovio	3.36 inches
April 10, 2012	Assessment Survey for Project survey area	T. Kegel S. Underbrink	3.36 inches
April 18, 2012	Assessment Survey for Project survey area	T. Kegel K. Sernka	3.75 inches
April 24, 2012	Assessment Survey for Project survey area	T. Kegel K. Sernka	3.76 inches
May 8, 2012	Assessment Survey for Project survey area	T. Kegel	4.16 inches
May 9, 2012	Focused Rare Plant Survey for Project survey area	T. Kegel D. Bramlet	4.16 inches
May 11, 2012	Focused Rare Plant Survey for Project survey area	T. Kegel J. Lovio	4.16 inches
June 27, 2012	Focused Rare Plant Survey for Project survey area	T. Kegel K. Sernka	4.16 inches
June 28, 2012	Focused Rare Plant Survey for Project survey area	T. Kegel K. Sernka	4.16 inches
July 16, 2012	Focused Rare Plant Survey for Project survey area	T. Kegel J. Lovio	4.23 inches

Special status plant species locations were documented as either points or polygons, depending on stand size, using Global Positioning System (GPS) technology or by plotting on the aerial photograph maps. Locations were uploaded or digitized into TRC's Geographic Information System (GIS). Photographs were taken of representative survey areas, special status plant species, and their habitats. All plant species observed during the field survey were recorded and are included as Appendix B. Scientific and common names of plants follow the Jepson Manual (Hickman, 1993) or more recently published taxonomical revisions of genera.

2.2 SURVEY PERSONNEL

The TRC botanist primarily responsible for the special status plant survey on the Proposed Project was Travis Kegel. Mr. Kegel has over six years of experience assessing biological site conditions, mapping vegetation, conducting rare plant surveys, and delineating wetlands in southern California, including western Riverside County. David Bramlet, independent sub-consultant, was contracted to provide initial guidance in identifying potentially occurring special status plant species, focal soil types and other habitat features supporting these species, and to conduct one comprehensive field visit to the Project survey area. Mr. Bramlet has over 30 years of experience conducting special status plant species surveys, vegetation

mapping, rare plant population monitoring, and vegetation restoration throughout southern California. Mr. Bramlet is also co-author of a book on the botany of western Riverside County.

The plant survey effort was assisted by TRC biologists John Lovio and Karyn Sernka, both of whom have experience with southern California vegetation and special status plant species.

3.0 EXISTING CONDITIONS

3.1 TOPOGRAPHY, VEGETATION, AND LAND USE

The Proposed Project occurs within the predominantly rural and natural landscape comprising the interior valleys, rolling hills, and rugged peaks between the Santa Ana and San Jacinto Mountain ranges of western Riverside County. The Proposed Project primarily follows existing roadways that pass through relatively gradual terrain of the Perris, Domenigoni, Paloma, and French Valleys, as well as portions of the northeast Sedco Hills.

The southern portion of the Project survey area is drained by the Warms Springs Creek watershed and the northern portion by the Domenigoni Channel. Portions of the valleys have no drainage outlets to the ocean.

The Proposed Project location on the east side of coastal mountains, in combination with relatively low elevation range of 1,300 to 2,600 feet above sea level, imposes arid conditions that are reflected in the vegetation. Xeric scrub vegetation dominates the steeper terrain, whereas the valley bottoms support mostly herbaceous types, such as grassland. Much of the steep terrain is extremely rocky, with many large granitic outcrops. Drainages and basins support willow-dominated riparian growth and/or marsh.

Human land uses in this area have historically consisted primarily of extensive agricultural conversion of the valley bottoms to dry grain and irrigated crops, as well as livestock grazing. Human dwellings are sparse and widely separated, but typically associated with non-native tree and shrub plantings. Although relatively steep terrain within the Project survey area supports a high percentage of native scrub vegetation, much of it shows evidence of past disturbance, such as through grazing or fire. The topography and/or vegetation of almost every drainage bear some evidence of past disturbance from crop cultivation, vegetation removal, channelization, or grazing. Much of the current riparian vegetation appears to be re-established growth following earlier disturbance. Vegetation on several drainages adjacent to recent suburban development have been actively enhanced or restored.

Human-caused modifications to the landscape include artificial water reservoirs and large tracts of non-native trees. Dense suburban and commercial development with associated landscaping and water control features constitute the most recent addition to the landscape of the Proposed Project. Dense development accounts for approximately a quarter of the area mapped within the 250-foot survey buffer. This human habitat occurs in discrete areas within the matrix of rural or undeveloped lands.

3.2 CLIMATE

The Proposed Project is located within a Mediterranean climate region characterized by warm, dry summers and mild, wet winters. In summer, day temperatures often reach or exceed 100º F and overnight winter temperatures can drop below freezing. Average annual daytime temperature ranges for the area are fairly moderate, ranging from 50º F to 80º F. Average total precipitation for the area is approximately 10 to 12 inches per year (Western Regional Climate Center, 2012). Rainfall typically occurs during the winter months, November to February, and consists of large individual storm events providing the bulk of the precipitation.

The 2011/2012 winter wet season was unusual in that large storm events did not account for the majority of the precipitation; rather numerous small storm events were responsible for the majority of the precipitation. The amount of precipitation was also below half the seasonal average with only 4.16 inches of precipitation at the time of the first focused survey. Although there was lower precipitation this season than on average, the plant phenology was observed to be only minimally affected. No phenological drought responses by plants (e.g., early and/or reduced blooming periods) were observed during spring and summer of 2012. This could be due to the even distribution of precipitation events throughout the season.

3.3 SOILS

Soils within the natural portions of the Project survey area are compositionally suitable to potentially support NEPS and CAPS. The Project survey area supports 85 soil types, according to the Natural Resources Conservation Service (NRCS) Soil Survey: Western Riverside Area California (2012). The soil types present within the Project survey area are identified in Appendix C. The suitability of these soils to support the NEPS and CAPS is discussed below. A map depicting the location of Clay and Saline/Alkaline soils is provided as Figure 4, Soils Map.

3.3.1 Clay Soils

The following NEPS and CAPS are generally associated with clay soils: Munz's onion, many-stemmed dudleya, California orcutt grass, Parish's brittlescale, thread-leaved brodiaea, and round-leaved filaree. The Auld clay, Bosanko clay, Porterville clay, and Willows clay soil series are present within the Project survey area.

3.3.2 Sandy, Rocky, Gravelly, or Loamy Soils

The following NEPS and CAPS are generally associated with sandy, rocky, gravelly or loamy soils: Brand’s phacelia, Munz’s mariposa lily, San Diego, San Miguel savory, slender-horned spine flower, heart-leaved pitcher sage, and Nevin’s barberry. Sandy, gravelly, or loamy soil types are present throughout the Project survey area.

3.3.3 Saline or Alkaline Soils

The following NEPS and CAPS plant species are generally associated with saline or alkaline soils: San Diego ambrosia, spreading navarretia, California orcutt grass, Wright's trichocoronis, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, smooth tarplant, Coulter's goldfields, and little mousetail. The Chino silt loam, Domino loam, Exeter sandy loam,

Grangeville fine sandy loam, Porterville clay, and Willows silty clay soil series all contain saline or alkaline components within the Project survey area.

4.0 RESULTS

4.1 VEGETATION COMMUNITIES

Geographically, the Proposed Project area occurs within the Southwestern California region of the California Floristic Province, and more specifically, in the South Coast subregion. The South Coast subregion extends along the Pacific Coast from Point Conception to Mexico. Twenty-two vegetation types, sub-types, and other land cover types were documented and mapped within the Project survey area. These are identified in Table 3: Vegetation Communities Within 250 Feet of Alternatives 1 and 2 and their distributions are depicted in Figure 5: Vegetation Communities Map (Sheets 1 through 8). Vegetation is classified and mapped according to the system of Holland (1986), as modified by Oberbauer et al. (2008). All vegetation types are discussed in detail here because of the comprehensive scope of the plant survey and the potential for all natural and some altered vegetation types to support special status plant species.

Table 3: Vegetation Types Within 250 Feet of Alternatives 1 and 2

Acres	Description	Standard Classification[1]
4.55	Willow-cottonwood riparian	Southern Cottonwood - Willow Riparian Forest (61330)
2.24	Willow riparian	Central Coast Arroyo Willow Riparian Forest (61230)
0.41	Restored riparian forest (mixed)	Southern Cottonwood - Willow Riparian Forest (61330)
0.83	Semi-native willow riparian scrub	Southern Willow Scrub (63320)
4.17	Mulefat riparian scrub	Mulefat Scrub (63310)
9.08	Dense, tall coastal sage scrub	Diegan Coastal Sage Scrub: Inland Form (32520)[2]
60.29	Mature open coastal sage scrub	Coastal Sage Scrub (32500 / 32700)
3.81	Chamise chaparral	Chamise Chaparral (37200)
4.53	Tall, dense css-chaparral	Coastal Sage - Chaparral Scrub (37GOO)
0.73	Burned css-chaparral	Coastal Sage - Chaparral Scrub (37GOO)
14.80	Low, sparse coastal sage scrub	Coastal Sage Scrub (32500 / 32700)
257.35	Ruderal	Disturbed Habitat (11300)[2]
92.40	Dense non-native grassland	Non-native Grassland (42200)
4.93	Semi-native grassland	Non-native Grassland (42200)
260.35	Unvegetated / developed	Urban / Developed (12000)[2]
30.17	Ornamental / planted veg	Urban / Developed (12000)[2]

Table 3 (cont.): Vegetation Types Within 250 Feet of Alternatives 1 and 2

Acres	Description	Standard Classification[1]
22.05	Eucalyptus	Eucalyptus Woodland (79100)[2]
3.84	Freshwater marsh	Valley Freshwater Marsh (52410)
1.33	Disturbed ephemeral wet basin	San Diego Mesa Claypan Vernal Pool (44322)[2]
277.84	Agriculture	Agriculture (18000)[2]
4.12	Disturbed flood control channel	Disturbed Wetland (11200)[2]
3.77	Open water	Fresh water (64140)[2]
1063.6 TOTAL ACREAGE		

[1] *Framework classification according to Holland 1986.*
[2] *Vegetation types not addressed in Holland 1986, so classified according to Oberbauer et al. 2008.*

4.1.1 Upland Herbaceous Vegetation

Non-woody, seasonally dry upland vegetation accounts for approximately 60 percent of the Project survey area. Dry herbaceous types occur mostly on level or gently sloping terrain, although they provide significant cover within open shrub vegetation on gradual to steep slopes as well. This general vegetation structural form consists of several defined types that vary in their degree of native composition and direct human origin. Upland herbaceous vegetation includes ruderal, nonnative grasslands, and agricultural habitats.

4.1.1.1 Ruderal (Holland-Oberbauer code 11300)

Ruderal is defined as consisting predominantly of non-native, short-lived annual plants adapted to colonizing disturbed areas. Ruderal areas typically have been disturbed to the degree where they no longer bear any resemblance to the original vegetation occurring in these places. Some native "weed" species and few small, fast-growing woody species may occur as part of this association. Ruderal vegetation establishes naturally on areas that have been disturbed by human-related activities such as tilling, grazing/trampling, scraping, or earth-moving. It occupies waste areas, often on roadsides with heavily compacted soils with little available oxygen. Ruderal areas are typically maintained in a disturbed condition on an infrequent basis, therefore allowing the establishment and proliferation of rank vegetation cover.

Approximately 257 acres of ruderal vegetation is distributed widely throughout the Project survey area, occurring on field edges, road margins, untended agricultural fields, and other areas previously mechanically disturbed, such as abandoned graded construction pads. Typical species vary depending on the location and level of disturbance, but are often dominated by herbaceous annuals and grasses. Species can include mustards (*Brassica* sp.), radish (*Raphanus sativus*), wild oat (*Avena* spp.), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), Australian saltbush (*Atriplex semibaccata*), tocalote (*Centaurea melitensis*), fennel, telegraph weed (*Heterotheca grandiflora*), castor bean (*Ricinus communis*), pineapple-weed (*Chamomilla suaveloens*), sowthistle (*Sonchus oleraceus*), horseweed, Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), bristly ox-tongue (*Lactuca serriola*), tarweeds

(*Deinandra* sp.), and goosefoot (*Chenopodium* spp.). Ornamental species may also colonize and proliferate in ruderal communities (Holland and Keil, 1995).

4.1.1.2 Non-Native Grassland (Holland-Oberbauer code 42200)

The distinction between ruderal and non-native grassland vegetation is based on a subjective threshold of proportion of grasses versus non-grass species. These types apparently share a common origin in disturbance combined with invasion by non-natives. Non-native grassland may be more typically associated with livestock grazing and ruderal may correspond more with former soil disturbance. The proportions of grass and forb vary, but predominance of dense grasses with a small proportion of forbs and few sparse or open areas defines non-native grassland. This vegetation is self-perpetuating.

Approximately 97 acres of non-native grassland occurs widely throughout the Project survey area on valley bottoms and gradual slopes. It often intergrades with and resembles dry grain agriculture and in places may represent fallow agricultural fields. It is also widespread in the openings within sparse, formerly disturbed coastal sage scrub, although it was not mapped separately as a component of scrub vegetation. Grassland is typically dominated by a mixture of non-native species such as wild oat (*Avena fatua*) and various bromes (*Bromus mollis, B. tectorum*, and *B. rubens*).

Grassland likely originally occupied much of the valley bottoms and gradual slopes in the inter-mountain lowlands of western Riverside County. Invasion of non-native herbaceous weedy species has been widespread, largely in response to ground disturbance, but areas only moderately disturbed and retaining relatively natural soil conditions often support a significant component of native grass and forb species. One area of non-native grassland, located southeast of the Menifee and Keller Road intersection, has more open characteristics and provides potential habitat for rare plant species and Quino checkerspot (*Euphydryas editha quino*). This area consists largely of non-native species and is dominated by wild oat, with lesser amounts of various bromes, dot-seed plantain (*Plantago erecta)* and tarweeds.

4.1.1.3 Agriculture (Holland-Oberbauer code 18000)

The predominant form of agriculture in the inter-mountain lowland area of western Riverside County is dry grain cultivation, particularly wheat. Actively tended agricultural lands account for approximately 278 acres of the Project survey area. Agriculture is confined to valley bottoms and low-gradient slopes and is characterized by monocultures of crops requiring cultivation (ground disturbance) and subject to regular, mechanical harvest. As such, these types are not self-perpetuating, actually representing a form of human development, and thus provide little habitat value for native plants and animals. However, the presence of vegetation cover, seasonal food source, and lack of human structures and roads provides some resources, including dispersal corridors, for adaptable animal species. Some disturbance-adapted, but geographically restricted (i.e., special status) native plant species also occur in agricultural margins.

4.1.2 Wetland Herbaceous Vegetation

Drainages and basins in the Project survey area are natural collecting places for water, either ephemerally or perennially. Water sources are either natural (e.g., rainfall, springs) or

anthropogenic (e.g., irrigation, runoff). Localized surface or subsurface water of any persistence results in abrupt vegetation changes in generally arid landscapes such as western Riverside County. Wetland vegetation often provides a disproportionate amount of cover and food resources in a landscape. Wetland herbaceous vegetation includes valley freshwater marsh, disturbed freshwater seep, and disturbed wetland habitats.

4.1.2.1 Valley Freshwater Marsh (Holland-Oberbauer Code 52410)

A total of 3.8 acres of valley freshwater marsh habitat are present within the Project survey area. Valley freshwater marsh is dominated by perennial, emergent monocots and occurs in areas of persistent, but not necessarily perennial, surface water. The interplay between marsh and woody riparian growth is complex, but generally marsh prevails in open wet areas with persistent, deep surface inundation and lacking significant flow. The prolonged saturation typically results in the accumulation of deep, peaty soils (Holland, 1986). Marsh establishment also occurs shortly after disturbance in wet areas. Marsh frequently occurs on the open peripheries of or in openings within woody riparian stands. The structural dominants in lowland inter-mountain western Riverside County marshes are bulrush (*Scirpus* spp.) and cattail (*Typha* spp.), which often form dense stands up to 3 meters tall. Many smaller native and non-native species such as spike rush (*Eleocharis* spp.), rush (*Juncus* spp.), sedge (*Cyperus* spp.), dock (*Rumex crispus*), salt grass (*Distichlis spicata*), and rabbit foot grass (*Polypogon monspeliensis*) also occur. These marshes also often include a few small, scattered individuals of woody species such as salt cedar (*Tamarix* spp.), mule fat (*Baccharis salicifolia*), and willow (*Salix* spp.).

Valley freshwater marsh habitat is scattered throughout the Project survey area along natural and channelized drainages and in natural and artificial storm water retention basins, where this vegetation type establishes shortly after disturbance. A large area of marsh occurs on the natural drainage basin near the southern end of Alternative Alignment 1, which follows Leon Road.

4.1.2.2 San Diego Mesa Claypan Vernal Pool (Holland-Oberbauer code 44322)

A total of 1.3 acres of disturbed ephemeral basin hydrology and vegetation occur within the Project survey area. Although no true vernal pools occur within the Project survey area, one localized basin provides wet conditions of sufficient seasonal duration to support prolonged growth of hydric and mesic herbaceous species, none of which are restricted to vernal pools. This disturbed vegetation type includes low wetland plant species such as common knotweed (*Polygonum aviculare* ssp. *depressum*), rush, spike rush, sedge, dock, salt grass, rabbit foot grass, and brass buttons (*Cotula coronopifolia*). This basin, which occurs immediately northeast of the intersection of Menifee and Scott Roads, also supports components of non-native grasses, which become more prevalent seasonally, as the soil dries.

4.1.2.3 Disturbed Wetland (Holland-Oberbauer code 11200)

A total of 4.1 acres of disturbed wetland habitat are present within the Project survey area. Disturbed wetlands are characterized by emergent monocots and forbs that are subject to a wide array of anthropogenic disturbance. The Domenigoni Channel, located north of and paralleled by Domenigoni Parkway, is a natural drainage that has been widely channelized for flood control. It supports low, disturbed wetland vegetation that experiences seasonal drying and livestock

grazing. Dominant vegetation included brass buttons, various flat sedges (*Cyperus* sp.), cattails, bulrush, saltgrass, and alkali heliotrope (*Heliotropium curassavicum*).

4.1.3 Native Shrublands

Associations of shrub-forming species are the dominant vegetation form throughout much of arid, lowland southern California. This woody or semi-woody form reflects adaptation to seasonal drought conditions and irregular disturbance through wildfire. Shrublands typically dominate on dry, often steep slopes of relatively poor, well-drained soils. Density and species composition vary with location and conditions, but most shrublands include an herbaceous component that ranges from sparse understory to extensive, floristically diverse associations in the shrub interstices.

4.1.3.1 Diegan Coastal Sage Scrub and Diegan Coastal Sage Scrub: Inland Form (Holland-Oberbauer codes 32500, 32520)

A total of 75 acres of Diegan coastal sage scrub (CSS) and 9 acres of Diegan CSS: Inland Form habitats are present within the Project survey area. Diegan CSS is an association of relatively low-stature, woody or semi-woody shrubs and subshrubs averaging less than two meters in height. Diegan CSS: Inland Form occurs farther from the coast and at somewhat higher elevations than the typical form, often intermixed with stands of chaparral vegetation. Although it shares the typical dominant shrub species with the coastal form of Diegan CSS, the inland form also includes a higher proportion of taller, woody species such as white sage (*Salvia apiana*) and bush penstemon (*Keckiella antirrhinoides*) resulting in a taller, more dense structure. These vegetation sub-types occur on lower elevation, more exposed, and highly drained slopes relative to other shrub types, therefore typically existing under the harshest conditions in the landscape. Component species have adapted to seasonal drought through a variety of means such as drought-deciduousness, reduced leaf surfaces and/or hard leaf cuticles that resist water loss, and large root masses. Many species contain aromatic compounds in their tissues to discourage herbivory. This vegetation is adapted to fire by such means as resistant basal tissues (i.e., crown-sprouting) and persistent seed bank.

Dominant shrub species of coastal sage scrub vary depending on local site factors (e.g., slope aspect, soil) and levels of disturbance. Approximately 90 acres of sage scrub is distributed widely throughout the Project and Alternative survey areas. Most of the Diegan CSS is uniformly dominated by buckwheat (*Eriogonum fasciculatum*). California sagebrush (*Artemisia californica*) occurs in varying proportions, but is rarely equal to buckwheat in dominance. Brittle bush (*Encelia farinosa*), which is an indicator of desert transition conditions, is very infrequent within the Project Area survey buffer, suggesting coastal affinities of the vegetation. Cacti such as cholla (*Cylindropuntia californica*) and prickly pear (*Opuntia littoralis*) occur in small proportion. This sage scrub vegetation is variably open, ranging from approximately 30 percent to 80 percent shrub cover and the average height is about one meter.

4.1.3.2 Coastal Sage – Chapparal Scrub (Holland-Oberbauer code 37GOO)

A total of 5.3 acres of coastal sage – chapparal scrub habitat is present within the Project survey area. Coastal Sage – Chapparal Scrub is generally located within the transition area located

between Deigan CSS and chamise chaparral and is composed of species from both vegetation communities. Buckwheat is still the common element to all stands, but California sagebrush is relatively more prevalent and other species such as white sage, black sage (*Salvia mellifera*), bush penstemon, spiny red berry (*Rhamnus crocea*), skunk brush (*Rhus trilobata*), thick leaf yerba santa (*Eriodictyon crassifolium*), and deer weed (*Lotus scoparius*) occur in variably high proportions. Buckwheat is typically not a sole dominant in these stands. The structure of these stands is dense (60 percent or greater shrub cover) and tall (average greater than one meter). Stands are located within the southwestern portion of the Project survey area, surrounding Clinton Keith Road.

4.1.3.3 Chamise Chaparral (Holland-Oberbauer code 37200)

A total of 3.8 acres of chamise chapparal habitat is present within the Project survey area. Chaparral differs from CSS in being composed of species with taller stature that grow in higher density. These species are somewhat less tolerant of seasonal drought than typical coastal sage scrub species, generally occurring at higher elevations and/or on more sheltered slopes (e.g., north-facing) with relatively moist conditions. They nevertheless exhibit drought-tolerant features, such as reduced leaf area and hard cuticles, and are adapted to survive wildfire.

Two small stands of chaparral consisting soley of chamise (*Adenostema fasciculatum*) occur in the southwestern part of the Project survey area. Several nearby stands of the taller, more diverse sage scrub described above include species that also occur in chaparal.

4.1.4 Woody Riparian Vegetation

Watercourses or basins with persistent to perennial surface or subsurface water flow or water table naturally support localized growth of trees and shrubs dependent on such available water. Such trees are characteristically winter-deciduous. Marsh vegetation also occurs under these conditions, as discussed above. Riparian stands often provide marked contrast against surrounding xeric vegetation in arid southern California.

Tree-dominated riparian stands vary significantly in height and density, depending on local hydrology and disturbance history. The distinction between scrubs and forest is somewhat imprecise, with the term scrub representing relatively open stands, typically with smaller trees. Riparian forest categories are defined as containing trees over 6 meters in height. Occasional isolated riparian trees of tall stature were mapped as “forest” to reflect the vegetation structure they provide. Riparian forest within the Project survey area reaches a maximum height of approximately 13 meters. Most stands are natural, but some within developed areas have been actively restored or enhanced, presumably as mitigation for construction impacts elsewhere. Restoration sites also include peripheral areas of riparian scrub.

4.1.4.1 Central Coast Arroyo Willow Riparian Forest (Holland-Oberbauer code 61230)

A total of 2.2 acres of central coast arroyo willow riparian forest are located within the Project survey area. Although species composition varies among forest stands within the Project survey area, the common element in all is the presence of one or more species of willow: arroyo (*Salix lasiolepis*), red (*S. laevigata*), black (*S. gooddingii*), and yellow (*S. lasiandra*). Willow-dominated riparian growth occurs in the southwesterrn portion of the survey area. Western

sycamore (*Platanus racemosa*) occurs in some stands, but generally appears to have been planted as part of restoration efforts .

4.1.4.2 Southern Cottonwood – Willow Riparian Forest (Holland-Oberbauer code 61330)

Several willow-dominated stands support varying proportions of Fremont cottonwood (*Populus fremontii*), the presence of which generally correlates with taller structure and apparently indicates greater stand maturity and longevity. A total of 5 acres of this vegetation occurs primarily within the southwestern portion of the Project survey area.

4.1.4.3 Mulefat Scrub (Holland-Oberbauer code 63310)

A total of 4.2 acres of mulefat scrub are located within the Project survey area. Mulefat (*Baccharis salicifolia*) scrub is composed of moderate to tall (four meters or less) shrubs in disturbance-prone areas of washes and floodplains or alonglower order drainages with less persistent water flow. It is often closely mixed with marsh growth and often occurs on the relatively dry peripheries of riparian forest stands. Mulefat is typically dominant with minor components of seasonal herbaceous plants, various willow species, or other low-growing, native woody plants. Stands are inherently variable in structure, depending on the amount of inundation and scouring they are subject to.

4.1.4.4 Southern Willow Scrub (Holland-Oberbauer code 63320)

A total of 0.8 acres of southern willow scrub are located within the Project survey area. Willow scrub is generally less than 6 meters in average height and tends to be relatively open and composed of smaller individual plants than forest or woodland, including certain species that do not naturally exceed this height. This vegetation rarely exceeds 4 meters in height and is often associated with former disturbance on watercourses or with lower order drainages with less persistent water flow. It is often closely mixed with marsh growth and often occurs on the relatively dry peripheries of riparian forest stands. This vegetation type is dominated by arroyo and/or red willow species, as well as lower-growing co-dominant species such as mulefat, mexican elderberry (*Sambucus mexicanus*), sandbar willow, black willow, and non-native salt cedar. This vegetation also includes a high proportion of non-native herbaceous wetland plants.

4.1.5 Anthropogenic Vegetation and Other Land Cover Types

Direct human modification of the natural landscape ranges from ground disturbance and non-native plantings, to water flow modification and storage, to development of structures and roads.

4.1.5.1 Ornamental Vegetation (Holland-Oberbauer codes 12000 and 79100)

A total of 30.2 acres of ornamental vegetation are located within the Project survey area. Ornamental vegetation vegetation includes intentionally planted and maintained non-native vegetation of a variety of structures and compositions. These comprise herbaceous to woody species requiring varying levels of active effort to maintain and include ornamental and shade plantings around residences, agricultural shelter belts, and tree stands originally planted as sources of wood. This vegetation provides some habitat structure for human commensal wildlife, particularly bird species adapted to or tolerant of human habitations. Eucalyptus trees

(*Eucalyptus* spp.) were mapped separately because of their prevalence, relatively long history in the California landscape, and nesting habitat provided for birds of prey.

4.1.5.2 Eucalyptus (Holland-Oberbauer code 11100)

A total of 22 acres of mapped eucalyptus stands are located within the Project survey area. Areas mapped as eucalyptus consist of stands of trees that are entirely, or primarily, comprised of one or more species of eucalyptus (*Eucalyptus* spp.), including silver dollar gum eucalyptus (*E. polyanthemos*) and blue gum (*E. globulus*). Eucalyptus stands often provide nesting habitat for birds of prey.

4.1.5.3 Disturbed / Developed (Holland-Oberbauer code 12000)

A total of 260 acres of disturbed/developed are located within the Project survey area. These areas consist of residential, commercial, infrastructure, and roadway development. These areas may include some planted, non-native vegetation.

4.1.5.4 Open Water (Holland-Oberbauer code 64140)

A total of 3.8 acres of open water are located within the Project survey area. Open water is included in the anthropogenic communities because it is only associated with human development in the form of treatment ponds, agricultural settling ponds, or flood control facilities. Open water habitat consists of large areas with standing water that are primarily unvegetated, but may support a few water-loving species such as pondweed (*Potamogeton* sp.) and filamentous algae. In areas with natural banks, the perimeter of open water habitat may be vegetated with wetland or riparian plant species.

4.2 MSHCP NARROW ENDEMIC AND CRITERIA AREA PLANT SPECIES

Five populations of smooth tarplant were identified during focused rare plant surveys conducted within the Project survey area. No additional MSHCP Narrow Endemic or Criteria Area plant species were identified during the botanical surveys of this transmission line route. A description of the smooth tarplant is provided below. Location information is provided below and in Table 4, CAPS Observation Locations. A map depicting the locations of each observation is provided as Figure 6, Species Observations. Photographs of specific smooth tarplant locations are provided in Appendix D, Smooth Tarplant Location Photographs.

4.2.1 Smooth Tarplant (*Centromadia pungens* ssp. *laevis*, CAPS Species, List 1B.1)

Smooth tarplant is a moderately sized annual with prickly foliage. It occurs in a variety of habitats including alkali scrub, alkali playas, riparian woodland, watercourses, and grasslands with alkaline affinities. The majority of the populations in western Riverside County are associated with alkali vernal plains. Smooth tarplant is found in southwestern California and northwestern Baja California, Mexico. It occurs in San Bernardino, Riverside, and San Diego Counties (CNPS, 2012).

Table 4: CAPS Observation Locations

Location No.	Datum / UTM Zone	UTM East	UTM North	Approximate Number of Individuals	Species
1	NAD 83/S11	488956.459	3728471.177	260	*Centromadia pungens* ssp. *laevis*
2	NAD 83/S11	488979.021	3727473.906	350	*Centromadia pungens* ssp. *laevis*
3	NAD 83/S11	489290.387	3726160.758	20	*Centromadia pungens* ssp. *laevis*
4	NAD 83/S11	488974.799	3722411.221	1	*Centromadia pungens* ssp. *laevis*
5	NAD 83/S11	486851.268	3717619.2312	20	*Centromadia pungens* ssp. *Laevis*
6	NAD 83/S11	490580.365	3719685.479	1,300	*Centromadia pungens* ssp. *laevis*

4.2.1.1 Location 1

There are approximately 260 smooth tarplant individuals within Location 1, which includes the Domginioni Channel and surrounding disturbed uplands. Within the Domginioni Channel smooth tarplant grows on both the northern and southern banks where wetland plant species transition to more ruderal species. In addition, occurrences were identified outside the Domginioni Channel in disturbed bermed areas. The observations occur within the Domino silt loam soil series. Co-dominant species occurring with the smooth tarplant include red brome (*Bromus rubens*), heliotrope (*Heliotropium curassavicum*), and Australian saltbush (*Atriplex semibaccata*). A site photo of the location is included within Appendix D, Photo 1. This location was observed outside the Criteria Area survey area and is therefore not subject to additional requirements pursuant to the MSHCP.

4.2.1.2 Location 2

Approximately 350 smooth tarplant individuals occur within Location 2, which comprises a vegetated swale and surrounding graded uplands. The smooth tarplants are located primarily within the vegetated swale with a few locations located within graded areas to the north of the swale. The observations occur within the Domino silt loam soil series. Vegetation within the swale is dominated by smooth tarplant, short pod mustard (*Hirschfeldia incana*), and heliotrope. A site photo of the location is included within Appendix D, Photo 2. This location was observed outside the Criteria Area survey area and is therefore not subject to additional requirements pursuant to the MSHCP.

4.2.1.3 Location 3

There were approximately 20 smooth tarplant individuals within Location 3, a seasonal pool that collects runoff from the adjacent Leon Road. The observations occur within the Cieneba rocky

sandy loam series. Areas within the pool are primarily unvegetated with emergent mulefat (*Baccharis salicifolia*), smooth tarplant, seep monkey flower (*Mimulus guttatus*), and rabbit's foot grass (*Polypogon monspeliensis*) growing at the pool's margins. A site photo of the location is included within Appendix D, Photo 3. This location was observed outside the Criteria Area survey area and is therefore not subject to additional requirements pursuant to the MSHCP.

4.2.1.4 Location 4

One individual smooth tarplant was identified within Location 4, which is composed of ruderal vegetation at the southeast corner of the intersection of Scott and Leon Roads. The observation occurs within the Chino silt loam series. It should be noted that a large population of smooth tarplant (approximately 500 individuals) was detected outside of the survey area approximately 600 feet east of Location 4. Location 4 is dominated by ruderal vegetation including Russian thistle (*Salsola tragus*), short pod mustard, prickly lettuce (*Lactuca serriola*), and tumbling pigweed (*Amaranthus albus*). A site photo of the location is included within Appendix D, Photo 4. This location was observed within the Criteria Area 4 survey area and subject to additional requirements pursuant to the MSHCP. The requirements for smooth tarplant located in Criteria Area 4 are described in detail within Section 5.1.

4.2.1.5 Location 5

Approximately 20 smooth tarplant individuals occur within Location 5, a road rut and swale that drain directly into Warm Springs Creek. The observations occurred within the Honcut sandy loam series. The vegetation associated with Location 5 is ruderal, dominated by smooth tarplant, fascicled tarplant (*Hemizonia fasciculata*), short pod mustard, and western ragweed (*Ambrosia psilostachya*). A site photo of the location is included within Appendix D, Photo 5. This location was observed within the Criteria Area 4 survey area and subject to additional requirements pursuant to the MSHCP. The requirements for smooth tarplant located in Criteria Area 4 are described in detail within Section 5.1.

4.3 CNPS RARE PLANT SPECIES

Focused surveys for rare plants were floristic in nature, meaning that plant species were identified to the subspecies level. Although not necessary to meet MSHCP requirements, populations of CNPS listed species were identified throughout the Project survey area. Specifically, populations of long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*, List 1B.2), Parry's spineflower (*Chorizanthe parryi* var. *parryi*, List 1B.1), clustered tarweed (*Deinandra fasciculata* [*Hemizonia fasciculata*], List 4), and San Diego tarweed (*Deinandra paniculata* [*Hemizonia paniculata*], List 4) were observed and recorded. Descriptions of these species are provided below. Locations of species observations are provided in Figure 6, Sheets 1 through 10. There are no additional conservation requirements for these species, as they are adequately covered within the MSHCP.

4.3.1 Long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*; List: 1B.2)

Long-spined spine flower is associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland, openings in coastal sage scrub, and chaparral (Reiser, 1994). The majority of populations are associated with needlegrass (*Nassella* sp.) in clay soils. Long-spined

spineflower occurs from about 100 to 1,400 meters in elevation in southwestern California and northwestern Baja California, Mexico, from western Riverside County south, through San Diego County (CNDDB, 2012).

Long-spined spine flower was observed within Diegan coastal sage scrub and non-native grassland in shallow clay soil lenses. The largest population of long-spined spine flower was observed southeast of the Menifee and Keller Road intersection. Over 5,500 individuals were observed within the Project survey area. Observation locations are shown on Figure 6, Sheets 5, 6, and 9.

4.3.2 Parry's spineflower (*Chorizanthe parryi* var. *parryi*; List 1B.1)

Parry's spineflower occurs within the alluvial chaparral and scrub of the San Gabriel, San Bernardino and San Jacinto Mountains, at elevations of 100 to 1,300 meters above mean sea level. This species is known from the flats and foothills of the San Gabriel, San Bernardino and San Jacinto Mountains within Los Angeles, San Bernardino and Riverside Counties of southern California (Reveal, 1989). Parry's spineflower is possibly extirpated from Los Angeles County.

Parry's spineflower was observed in openings within CSS vegetation and was generally associated with granitic soils. Observations were often associated with biotic crusts located below granite outcroppings and consistent with undisturbed soils. Approximately 25 individuals were identified at various locations within the Project survey area surrounding the Clinton Keith and Menifee Roads alignments. Observation locations are shown on Figure 6, Sheets 6, 7, and 9.

4.3.3 Clustered tarweed (*Deinandra fasciculata* [*Hemizonia fasciculata*]; List 4)

Clustered tarweed is an herbaceous annual growing to 36 inches tall. The tarweed blooms prolifically, with small yellow disk flowers that are clustered at the ends of short, thin branches. The flowers are crowded at the tip of branches giving it a 'clustered' look. Often found in open or disturbed sites including grasslands, coastal scrubs, woodlands, vernal pools, and ruderal areas. Its flowering period is from April to November.

Clustered tarweed was observed in large quantities throughout the Project survey area. Observations were primarily located in non-native grassland habitat but also had instances within mulefat scrub, Diegan CSS, disturbed/developed, southern willow scrub, and valley freshwater marsh habitat. Often observations were associated with seasonally mesic sites such as swales or minor changes in topography. While exact counts of the species were not collected, it is estimated that 10,000 to 20, 000 individuals occur within the Project survey area. Areas of higher density are shown on Figure 6, Sheets 3, 5, 6, 8, and 9.

4.3.4 San Diego tarweed (*Deinandra paniculata* [*Hemizonia paniculata*]; List 4)

San Diego tarweed is an herbaceous annual growing to 36 inches tall. It branches profusely above the middle of the plant, giving it a twiggy appearance. Single flowers are scattered throughout the plant. It is found in open or disturbed sites including grasslands, coastal scrubs, woodlands, vernal pools, and ruderal areas. Its flowering period is from April to November.

San Diego tarweed was observed in extremely large quantities throughout the Project survey area. Similar to clustered tarweed, observations of San Diego tarweed are primarily located in non-native grassland habitat, but it also occurs within mulefat scrub, Diegan CSS, disturbed/developed, southern willow scrub, and valley freshwater marsh habitat. San Diego tarweed was often observed in association with seasonally mesic sites, such as swales or minor changes in topography. While exact counts of the species were not collected, it is estimated the populations within the Project survey area exceed 30,000 individuals. Areas of higher density are shown on Figure 6, Sheets 3, 5, 6, 8, and 9.

5.0 CONCLUSION AND RECOMMENDATIONS

The Project survey area supports various special status plant species habitats in various stages of disturbance and integrity. TRC field personnel did not detect any federally or state listed plant species. TRC did, however, detect smooth tarplant, which is a MSHCP-defined CAPS. Smooth tarplant was present at five locations within the Project survey area. This species is generally associated with or near seasonally mesic sites located in loamy soils. The goals and conservation guidelines in the MSHCP for CAPS, and specifically for smooth tarplant, are outlined below.

5.1 CRITERIA AREA PLANT SPECIES AVOIDANCE AND MINIMIZATION

The MSHCP specifically states for Criteria Area Survey Plant Species populations identified as part of the survey process that:

> "*... for locations with positive survey results, 90 percent of those portions of the property that provide for long-term conservation value for the identified species shall be avoided until it is demonstrated that conservation goals for the particular species are met*."

This objective applies to the smooth tarplant observations located within the Criteria Area 4 survey area, specifically Locations 4, 5, and 6. Smooth tarplants located within Criteria Area 4 are recommended to be conserved in accordance with procedures described in Section 3.1.2 of the MSHCP, Volume 1. The development footprint is uncertain; therefore the impacts plan should take into account locations of the smooth tarplant and avoid 90 percent of the occupied portions at minimum. If 90 percent avoidance cannot be achieved, a DBESP analysis is required.

5.2 RECOMMENDATIONS

Focused botanical surveys for the Proposed Project were conducted during spring and summer of 2012 (April through July). A focused survey was conducted within the Project survey area in suitable habitat.

As outlined in Section 5.1, TRC recommends 90 percent avoidance of occupied habitat for known observations of the smooth tarplant within Criteria Area 4. If 90 percent avoidance cannot be achieved, a DBESP analysis is required.

6.0 REFERENCES

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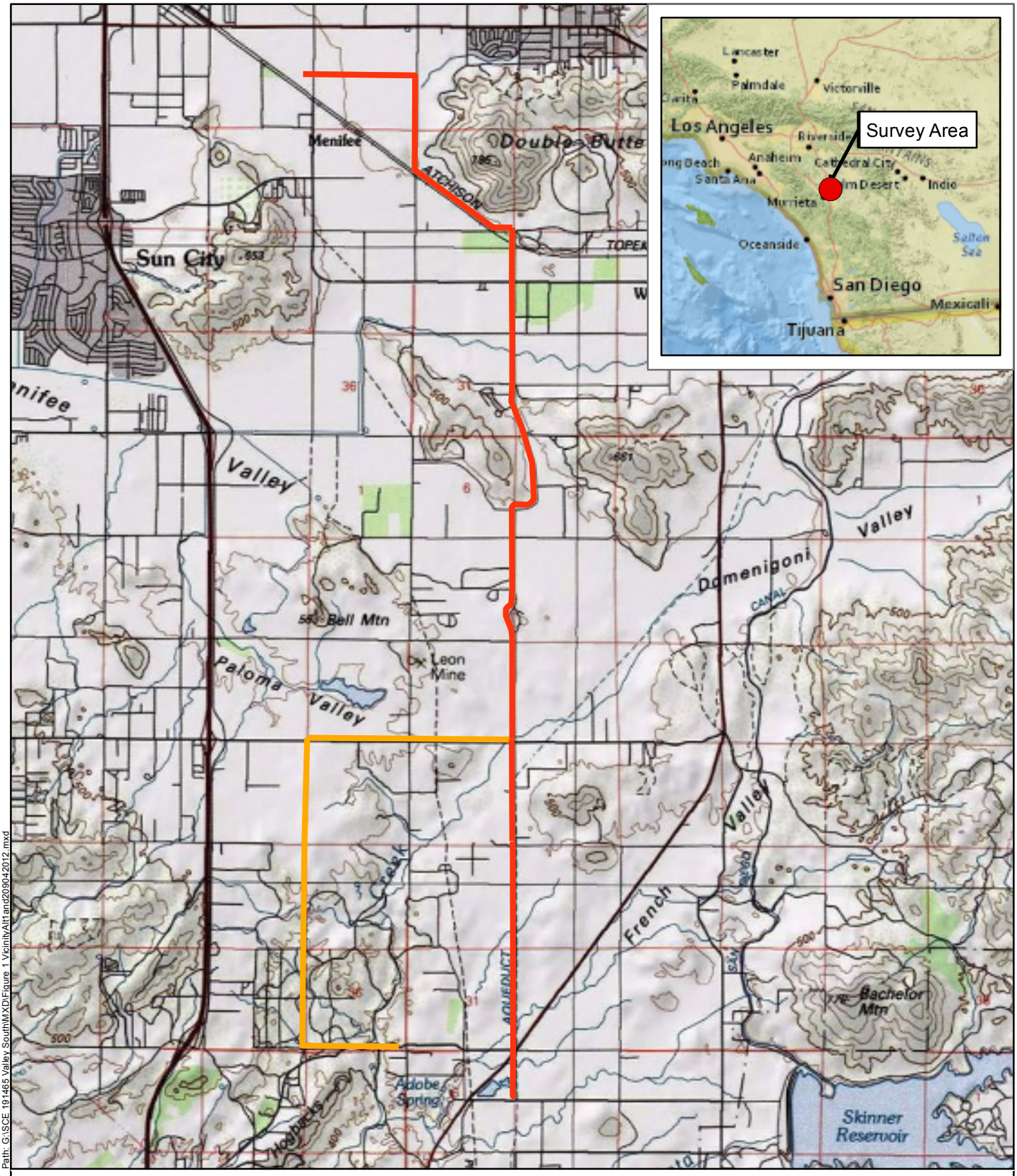
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FIGURES



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Legend

- Preferred Route (Alternative 1)
- Alternative Route (Alternative 2)

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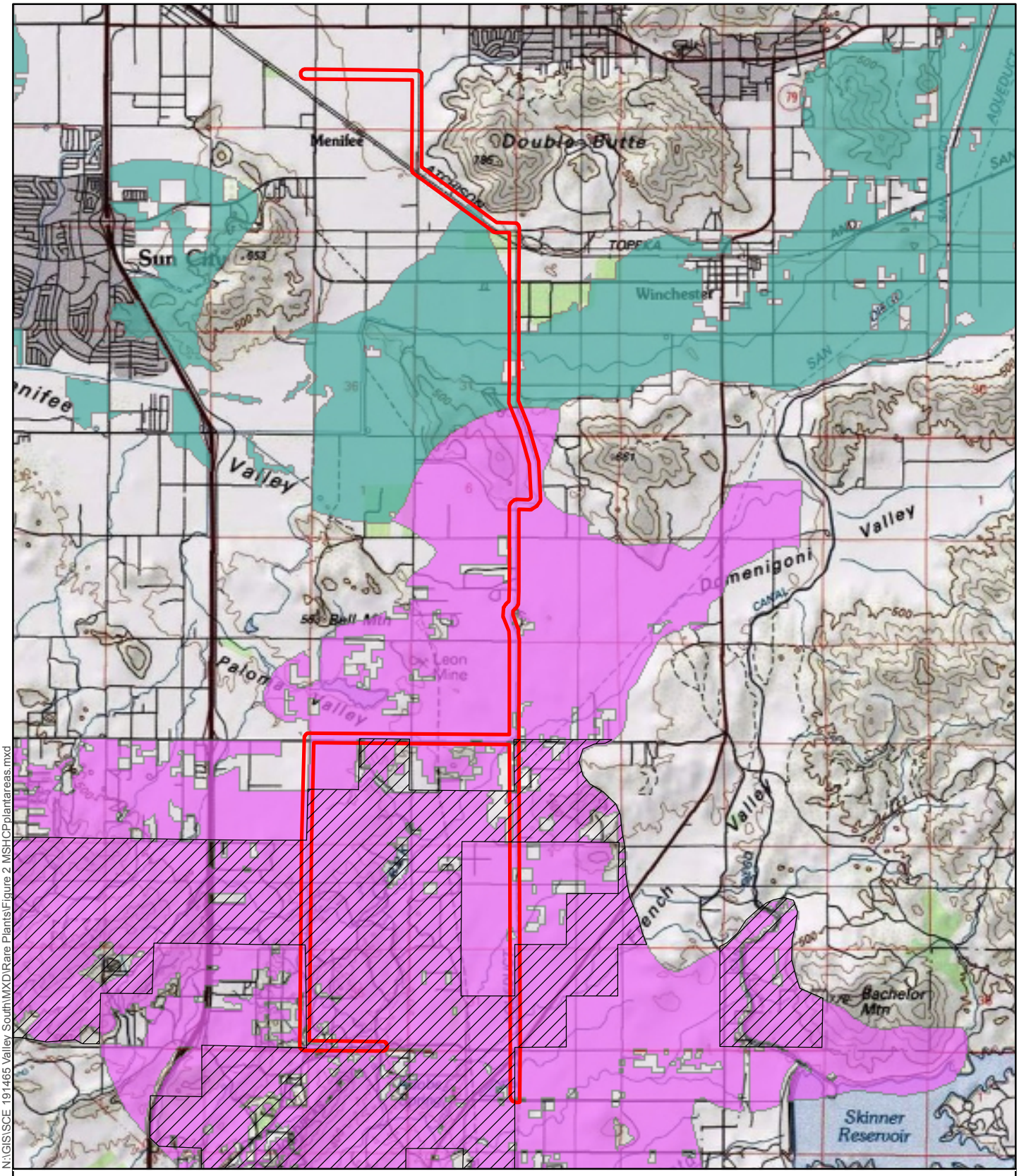
Source: ESRI Server

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Vicinity Map

Figure 1

TRC



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Legend

- Project Survey Area
- Plant Criteria Survey Area 4
- Narrow Endemic Plants Survey Area 3
- Narrow Endemic Plants Survey Area 4

Source: ESRI Server, RCA Overlays

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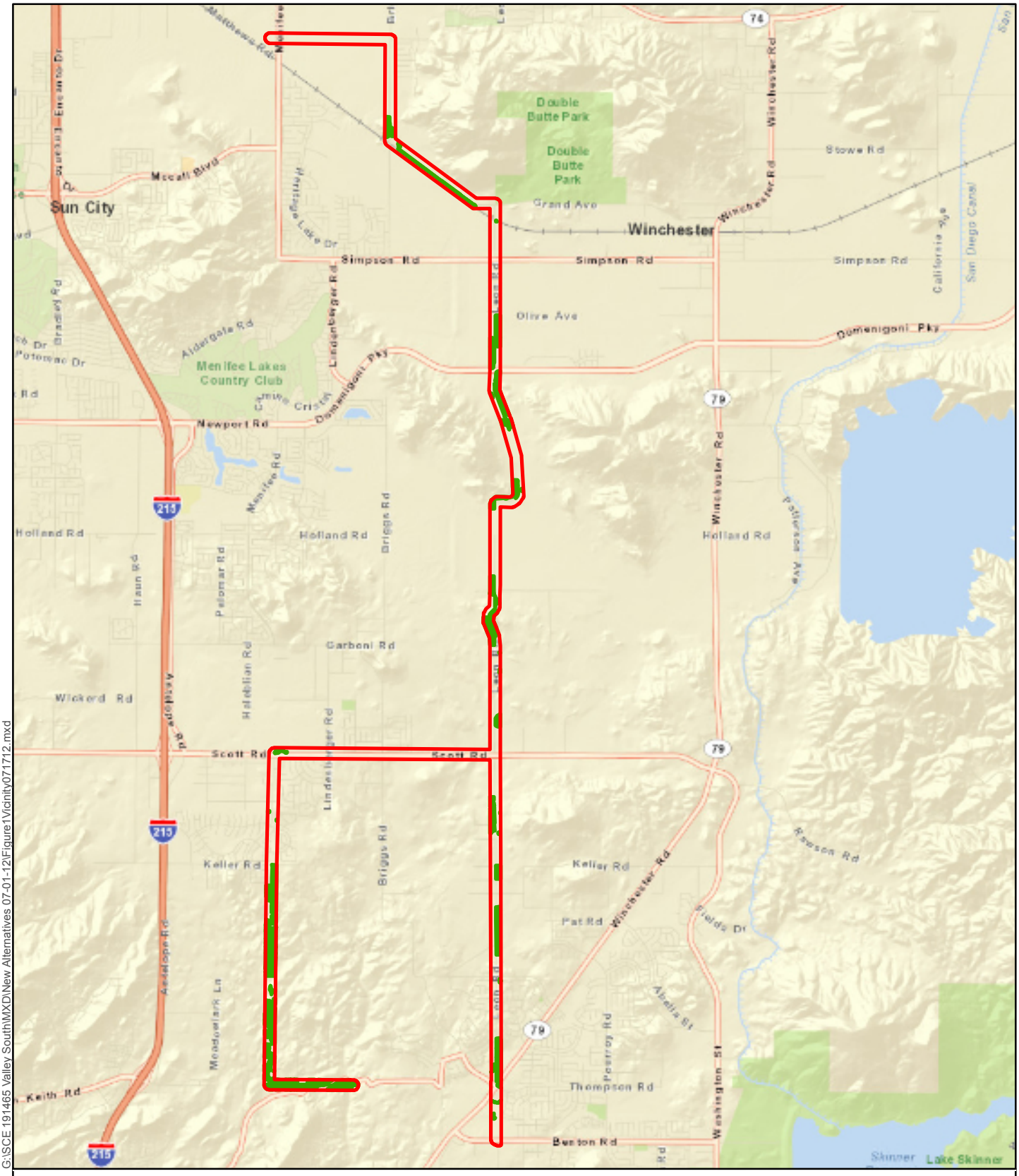
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Valley South Subtransmission Project

MSHCP Survey Areas

Figure 2

TRC



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Legend

- Project Survey Area
- Potential Habitat for Rare Plants

Source: ESRI Server

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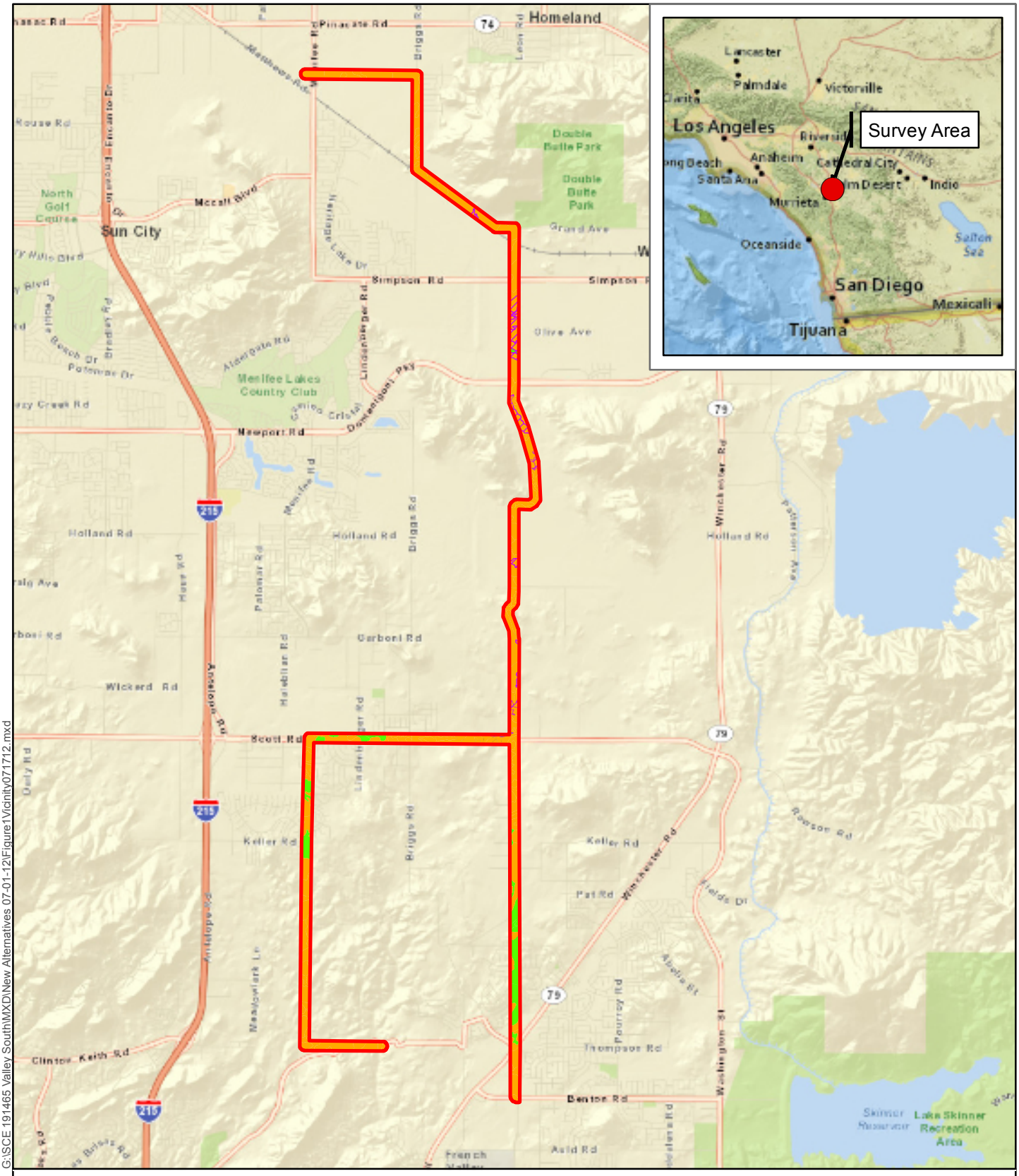
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Valley South Subtransmission Project

Rare Plant Habitat

Figure 3

TRC



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Legend

- Project survey area
- Loamy, Sandy, Rocky Soils
- Clay
- Saline-Alkali

Source: ESRI Server

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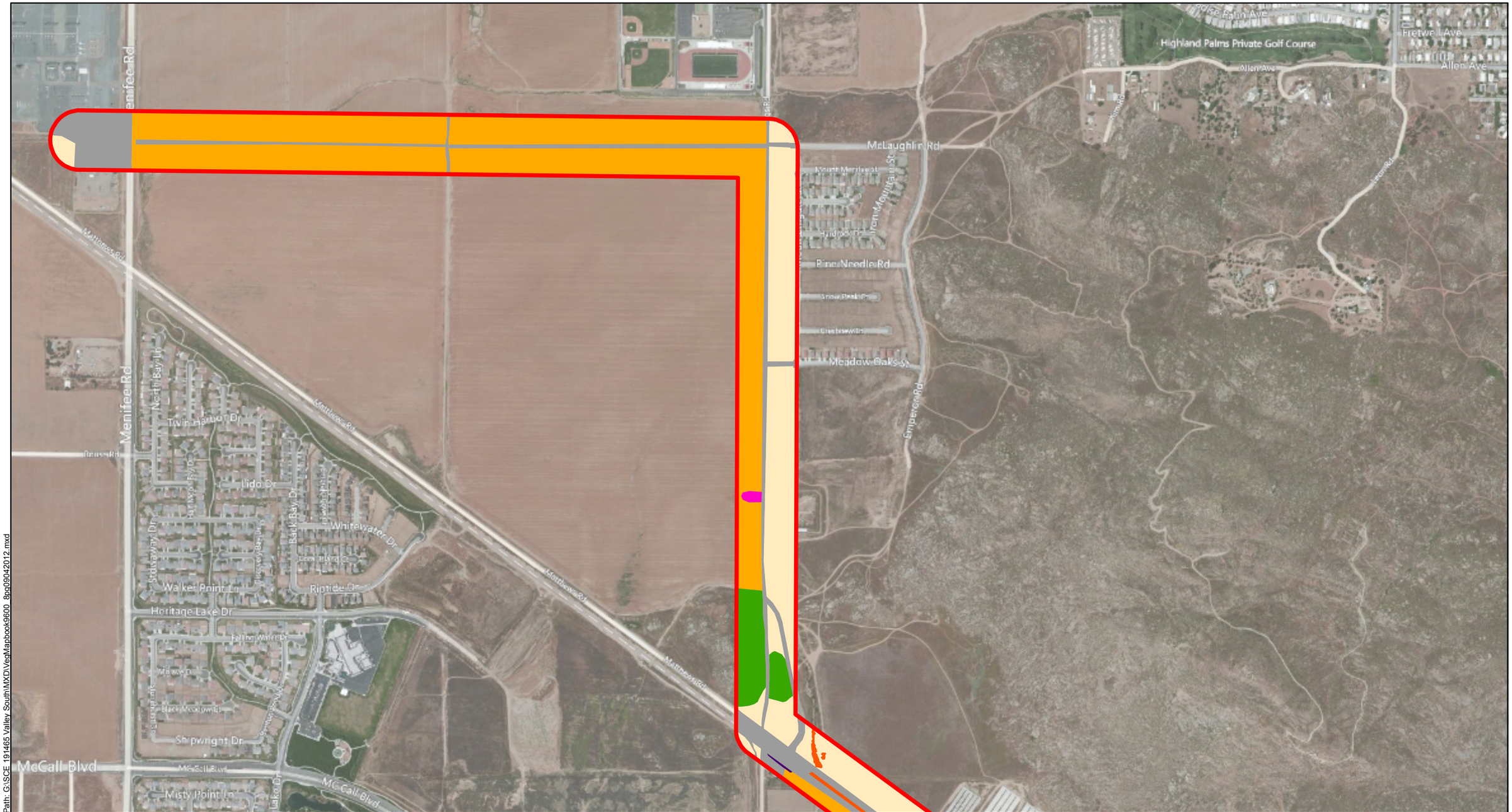
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Valley South Subtransmission Project

Soils Map

Figure 4

TRC



Legend

- 500 ft Survey Corridor
- Agriculture (18000)
- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub: Inland Form (32520)
- Disturbed / Developed (12000)
- San Diego Mesa Claypan Vernal Pool (44322)
- Disturbed Wetland (11200)
- Eucalyptus (11100)
- Mulefat Scrub (63310)
- Non-native Grassland (42200)
- Open Water (64140)
- Ornamental Vegetation (12000)
- Ruderal (11300)
- Southern Cottonwood - Willow Riparian Forest (61330)
- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

N

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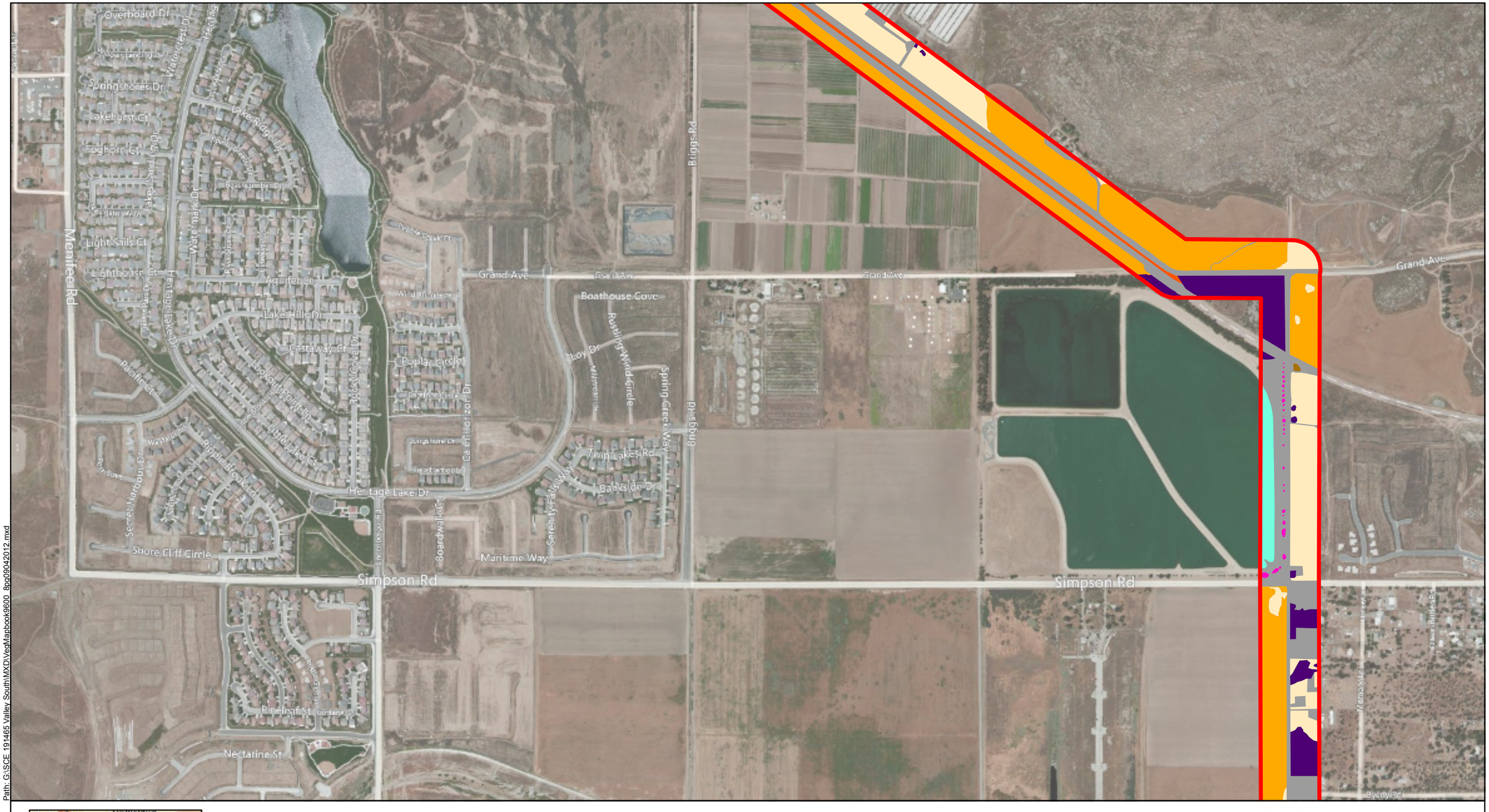
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Vegetation Communities Map
Sheet 1 of 8

Figure 5

TRC

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Legend

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- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
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- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

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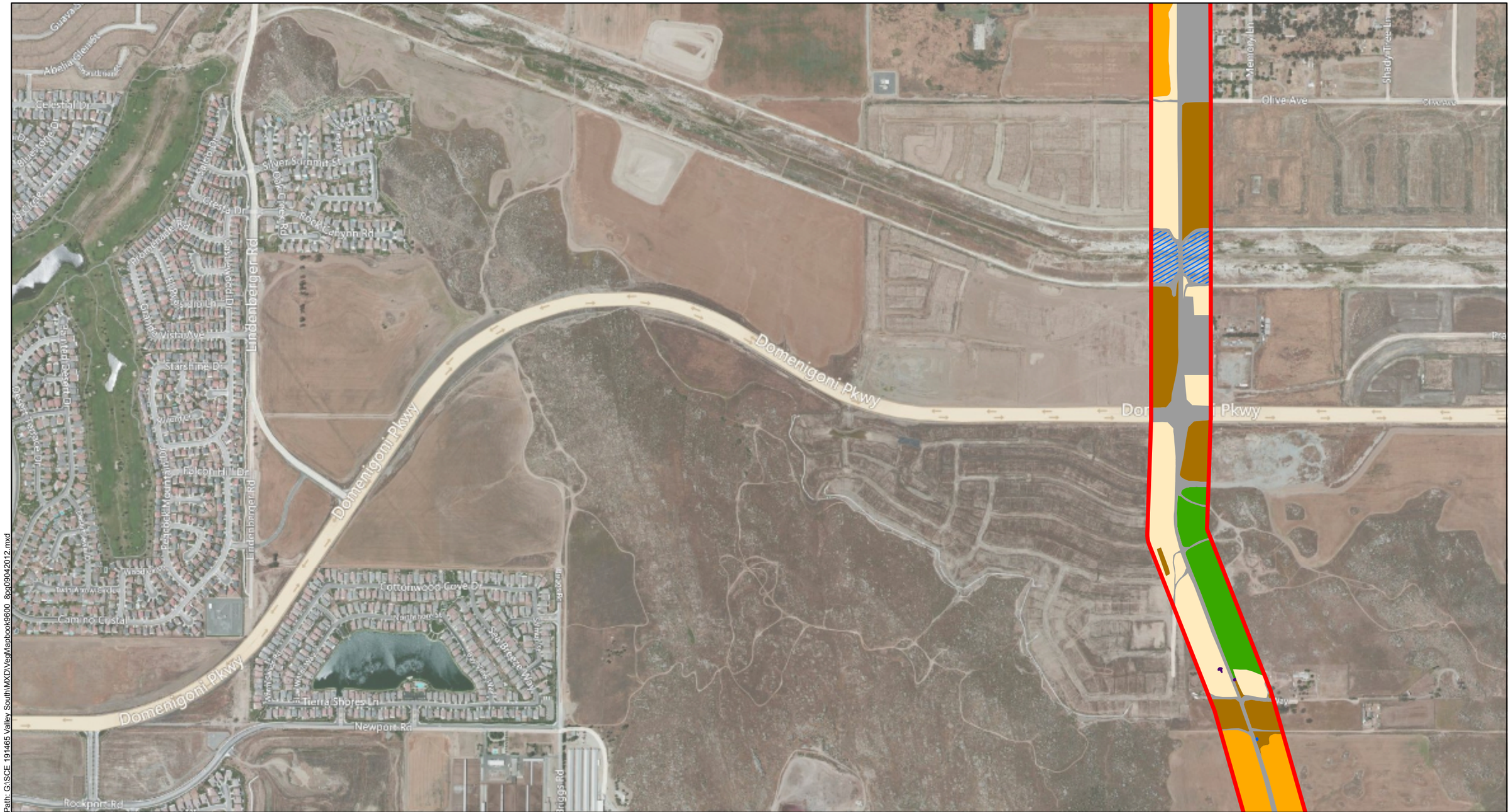
Southern California Edison
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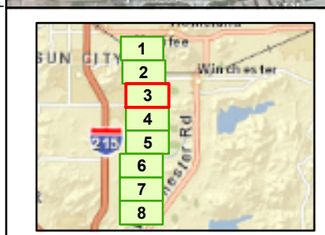
Vegetation Communities Map

Sheet 2 of 8

Figure 5

TRC





Legend

- 500 ft Survey Corridor
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- Valley Freshwater Marsh (52410)
- Unknown

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Valley South Subtransmission Project

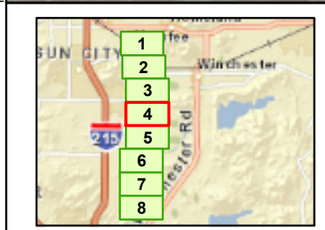
Vegetation Communities Map
Sheet 3 of 8

Figure 5

TRC

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Legend

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- Southern Cottonwood - Willow Riparian Forest (61330)
- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

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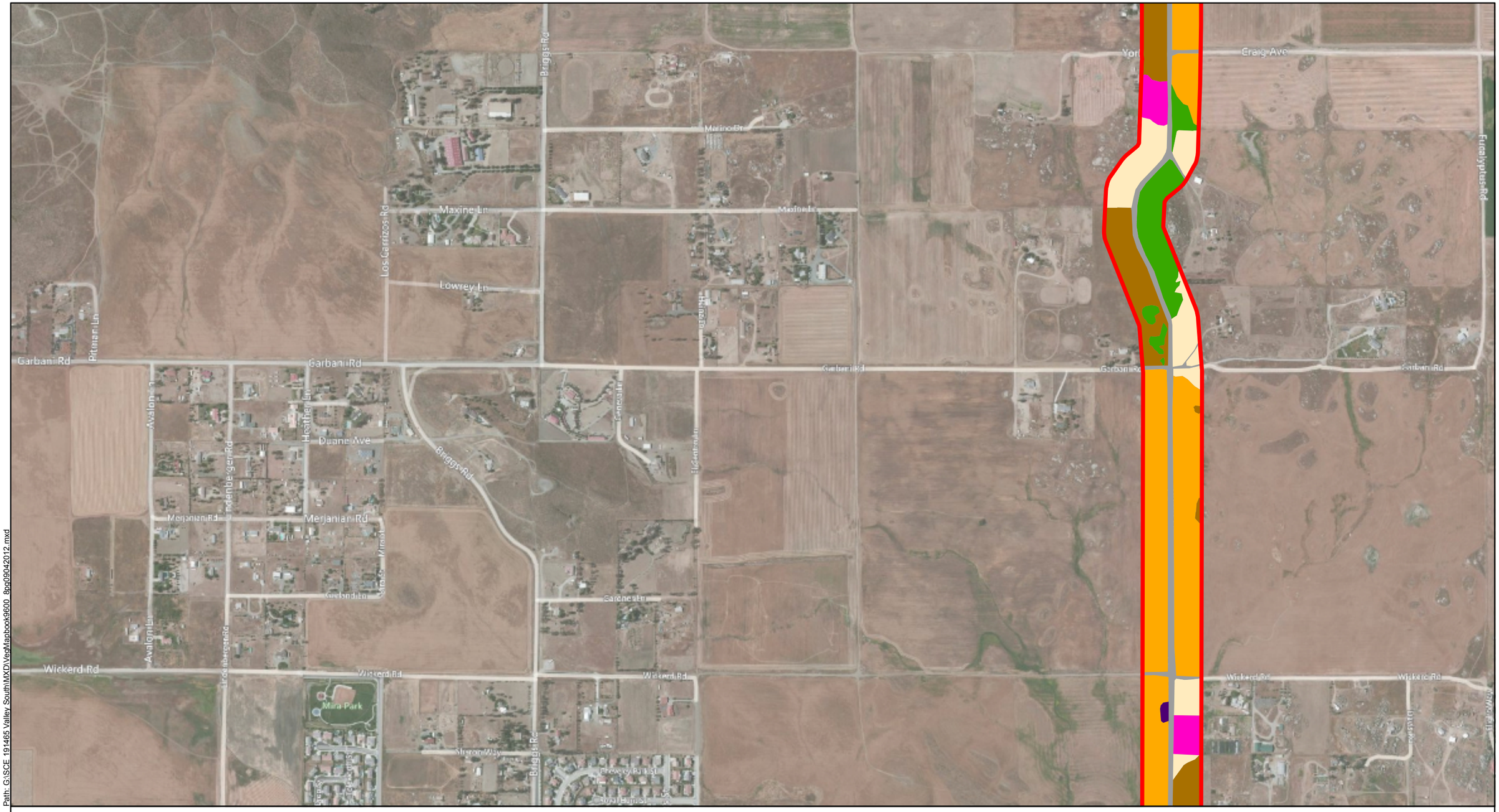
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Valley South Subtransmission Project

Vegetation Communities Map
Sheet 4 of 8

Figure 5

TRC

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Legend

- 500 ft Survey Corridor
- Agriculture (18000)
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- Coastal Sage - Chaparral Scrub (37GOO)
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- Valley Freshwater Marsh (52410)
- Unknown

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Southern California Edison
Valley South Subtransmission Project

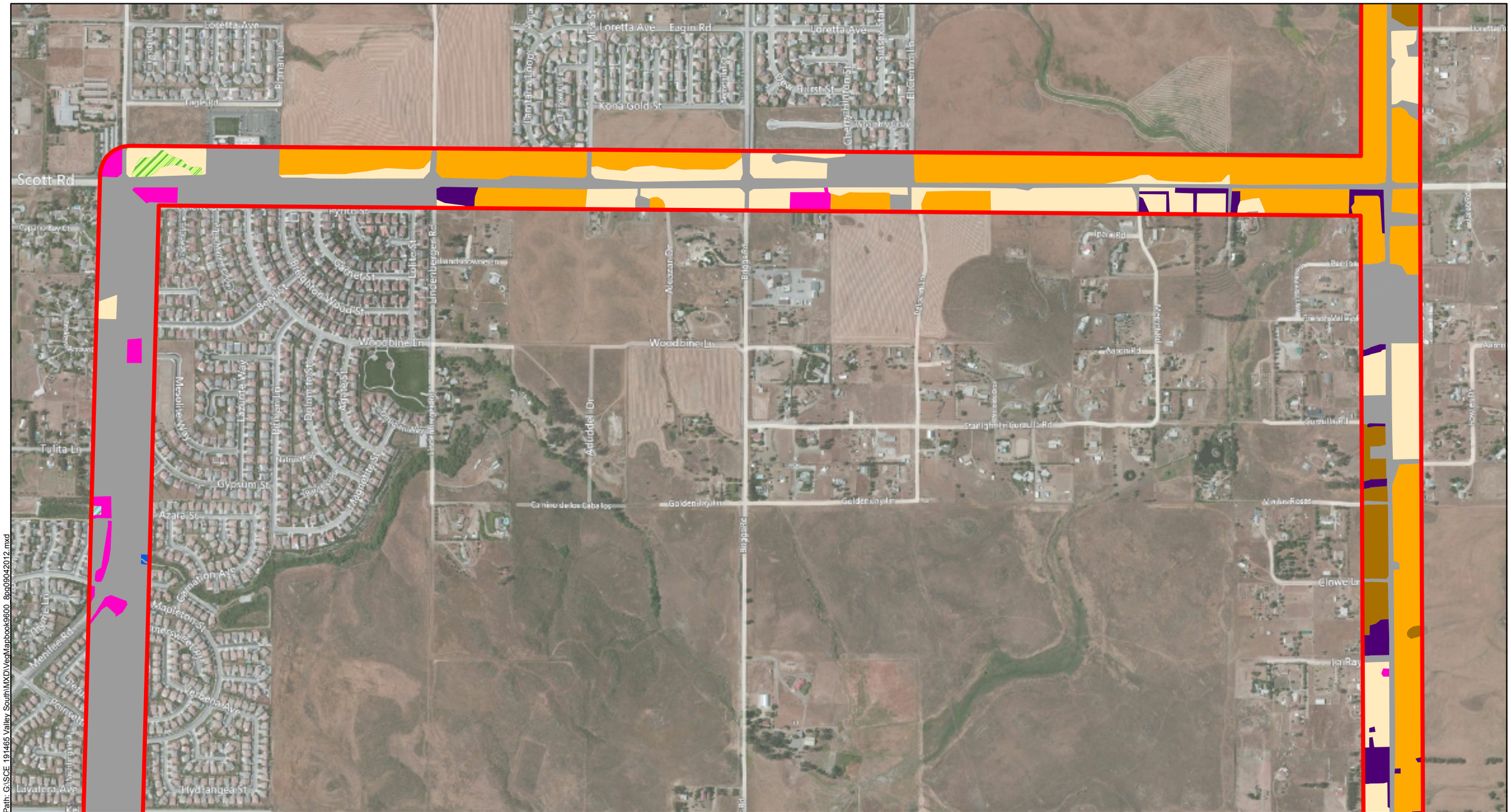
Vegetation Communities Map

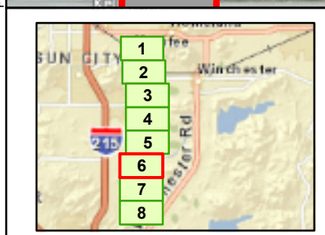
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Figure 5

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Legend

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- Ruderal (11300)
- Southern Cottonwood - Willow Riparian Forest (61330)
- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

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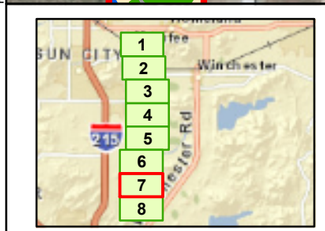
Southern California Edison
Valley South Subtransmission Project

Vegetation Communities Map
Sheet 6 of 8

Figure 5

TRC





Legend

- 500 ft Survey Corridor
- Agriculture (18000)
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- Valley Freshwater Marsh (52410)
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Southern California Edison
Valley South Subtransmission Project

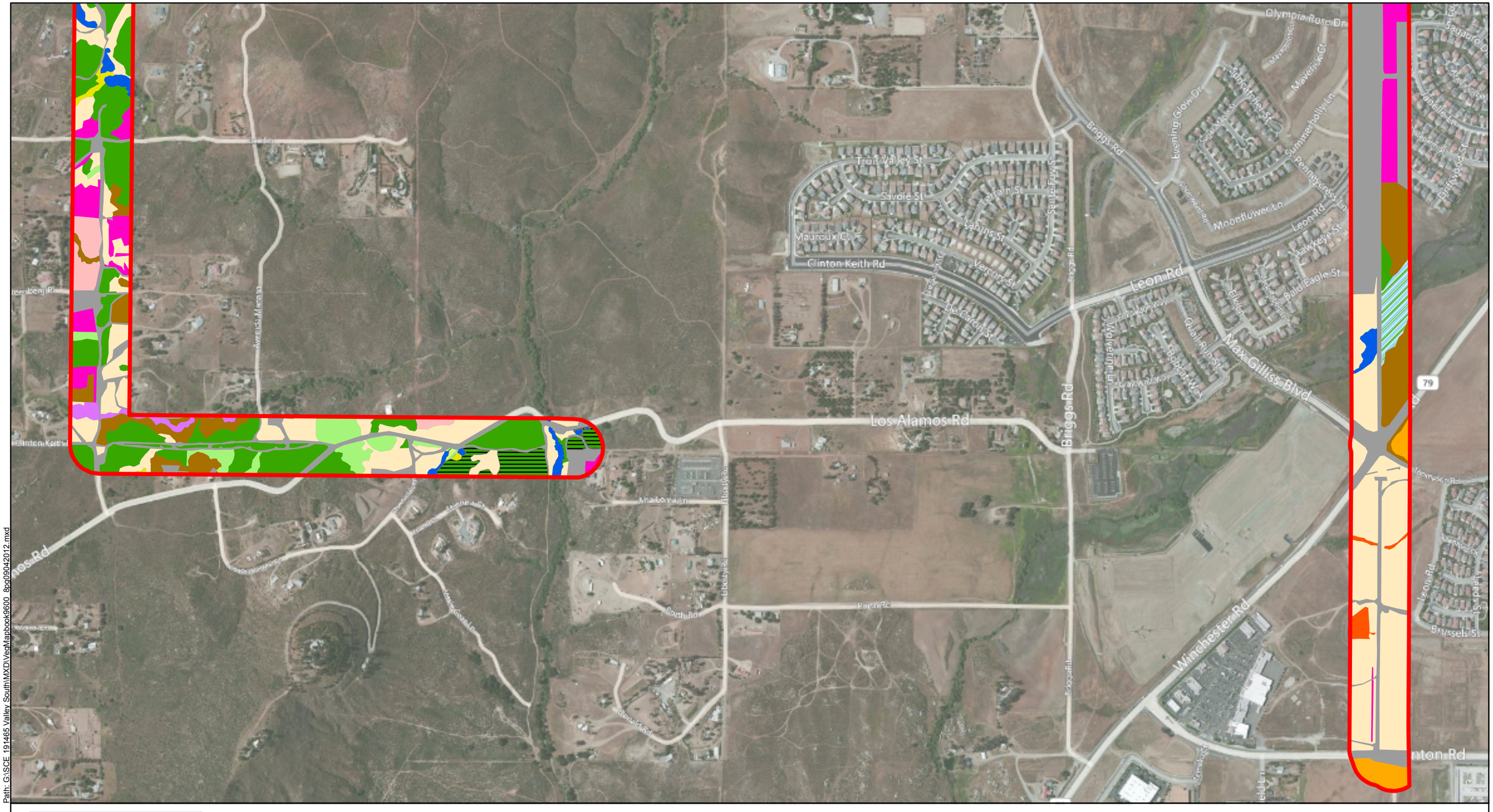
Vegetation Communities Map

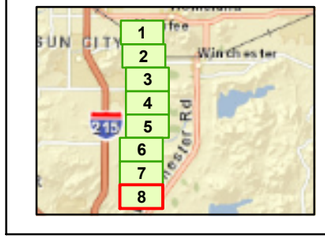
Sheet 7 of 8

Figure 5

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Legend

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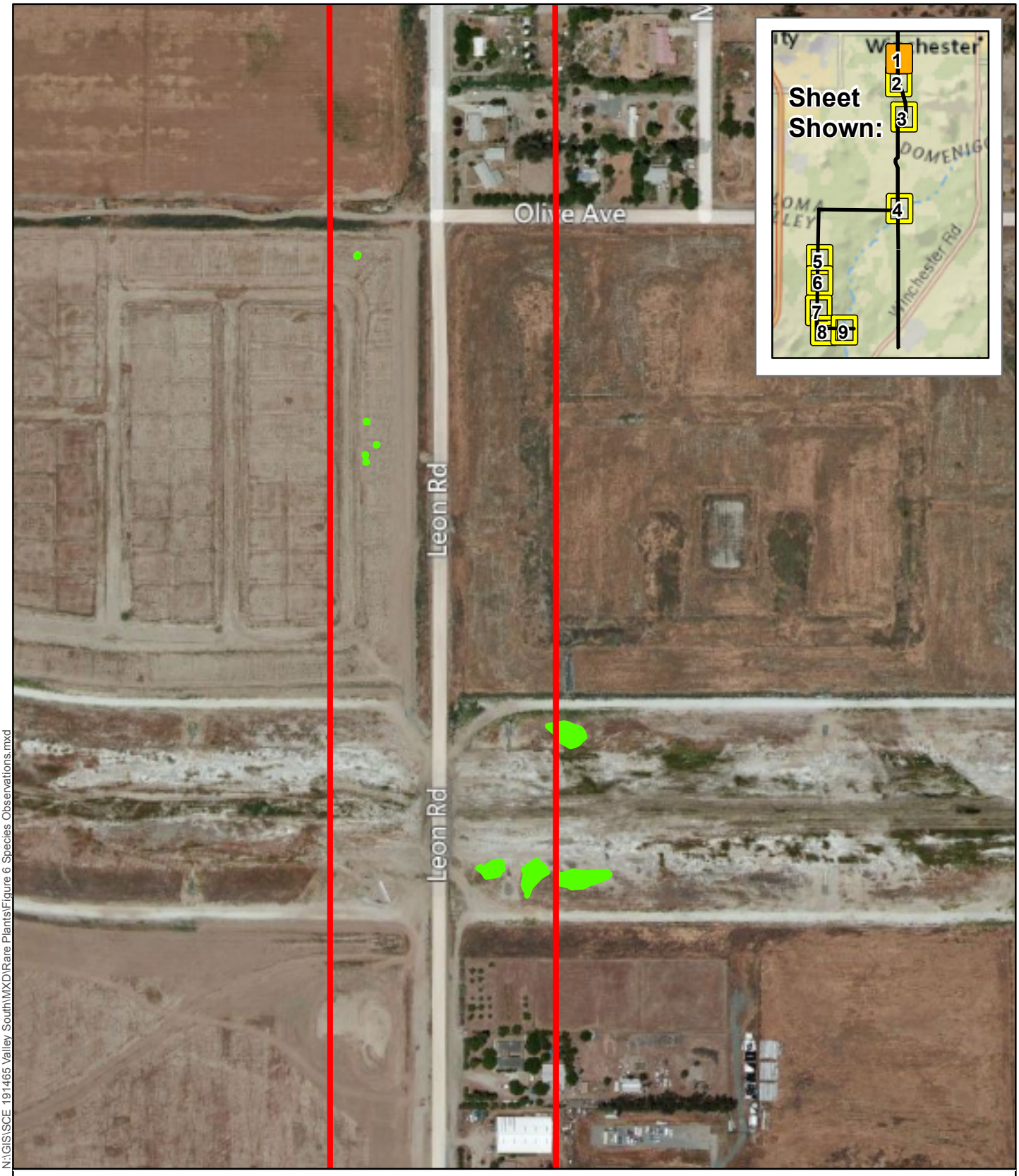
Southern California Edison
Valley South Subtransmission Project

Vegetation Communities Map
Sheet 8 of 8

Figure 5

TRC

Path: G:\SCE 191465 Valley South\MXD\VegMapbook9600_8pg09042012.mxd



N:\GIS\SCE 191465 Valley South\MXD\Rare Plants\Figure 6 Species Observations.mxd

Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 1 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

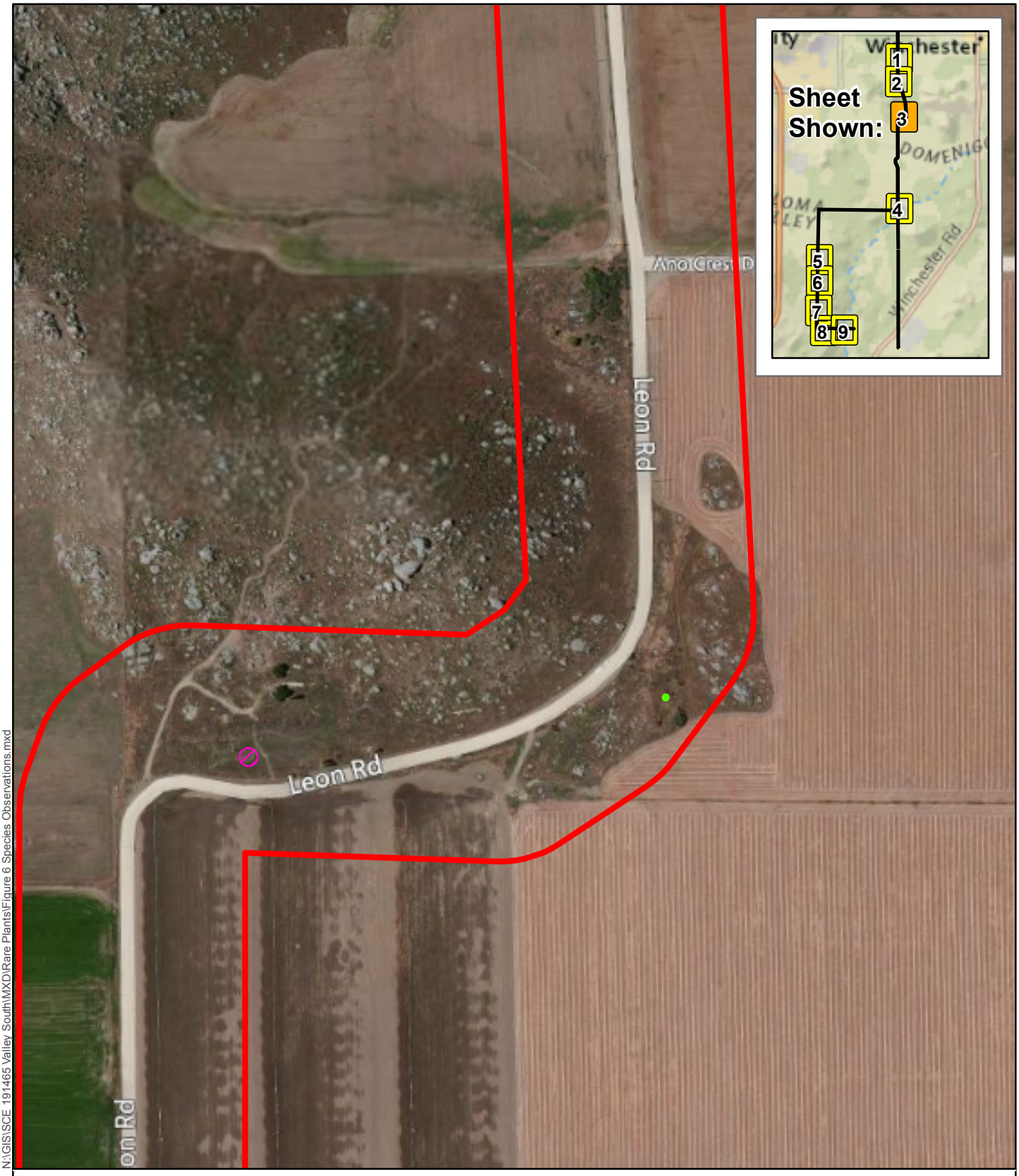
Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 2 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 3 of 9

TRC



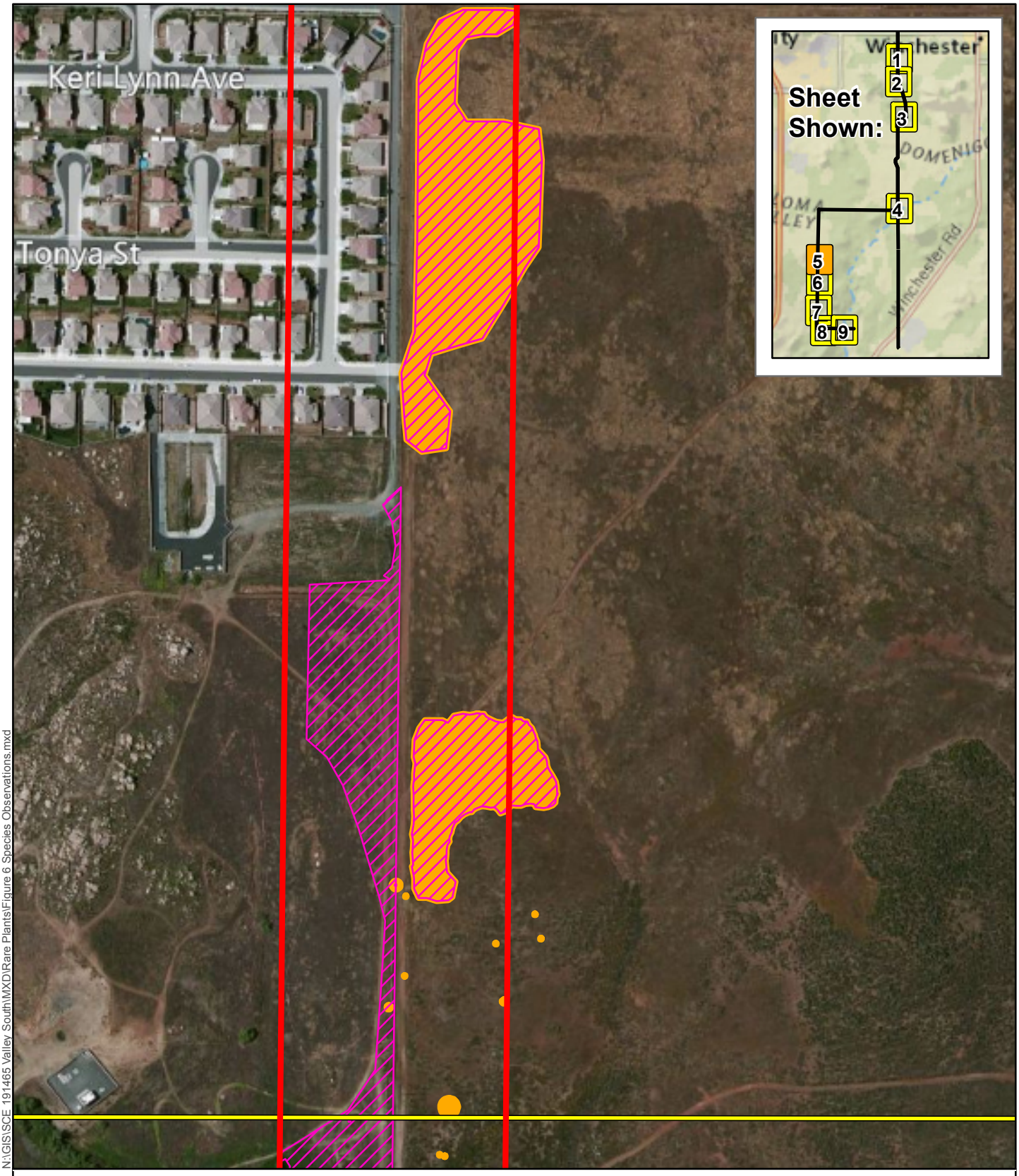
Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 4 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

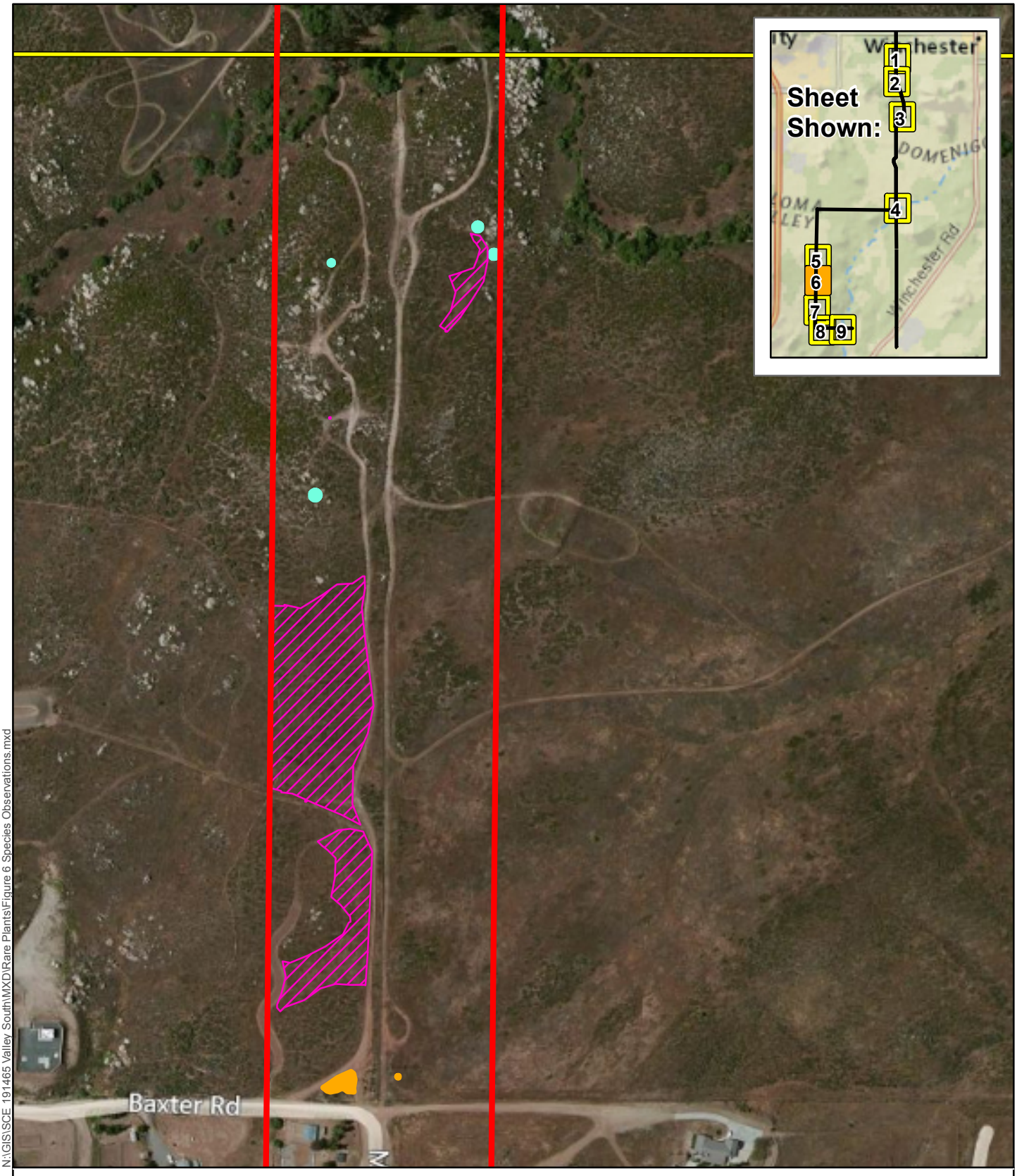
Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 5 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

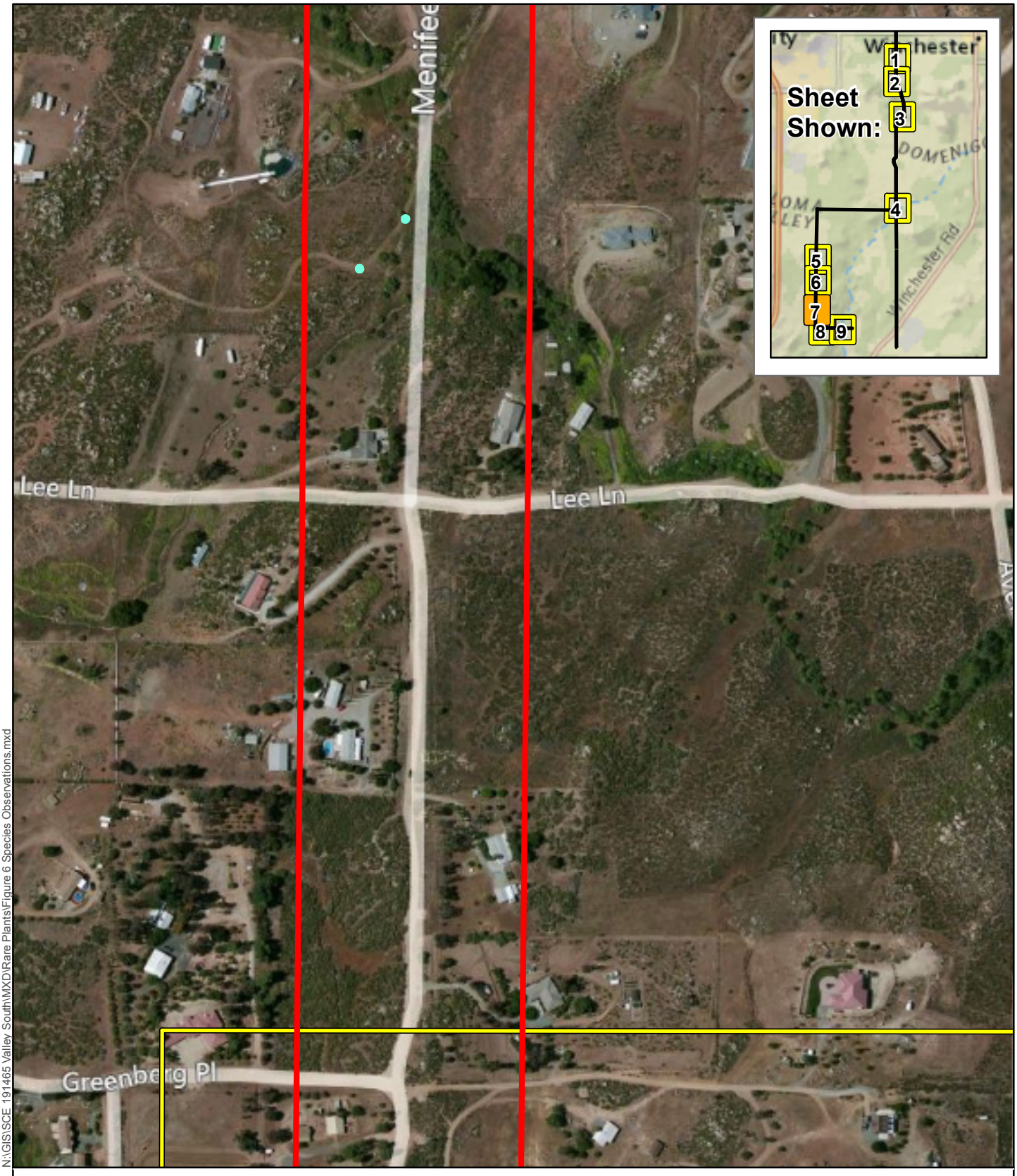
Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 6 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 7 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 8 of 9

TRC



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Legend

- Project Survey Area
- Smooth Tarplant
- Long-spined Spineflower
- Parry's Spineflower
- Clustered tarweed and/or San Diego tarweed

Source: ESRI Server

N

0 150 300 Feet

Southern California Edison
Valley South Subtransmission Project

Species Observations

Figure 6

Sheet 9 of 9

TRC

APPENDIX A

CNDDB and CNPS Rare Plants

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
	Plants					
Brand's star phacelia	*Phacelia stellaris*	Federal: FC, SSC State: None CNPS: 1B.1 MSHCP: NE	Coastal dunes and coastal scrub. Occurs between 1 and 400 m.	Annual herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
California bearddtongue	*Penstemon californicus*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chapparral, Lower montane coniferous forest, pinyon and juniper woodland. Prefers sandy soils. Occurs between 1,170 and 2,300 m.	Perennial herb	May to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
California orcutt grass	*Orcuttia californica* var. *californica*	Federal: FE State: SE CNPS: 1B.2 MSHCP: NE	Vernal pools. Occurs between 15 and 660 m.	Annual herb	April to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, coastal scrub, desert dunes/sandy soils. Occurs between 80 and 1,600 m.	Annual herb	January to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: 1B.1 MSHCP:CA	Marshes, swamps (coastal salt), playas and vernal pools. Occurs between 1 and 1,220 m.	Annual herb	February to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS: 1B.2 MSHCP: CA	Coastal bluff scrub, coastal scrub. Prefers alkaline soils. Occurs between 10 and 200 m.	Annual herb	April to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Hammitt's clay-cress	*Sibaropsis hammittii*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Prefers clay substrate. Chaparral (openings), valley and foothill grasslands. Occurs between 720 and 1,065 m.	Annual herb	March to April	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Intermediate mariposa lily	*Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Rocky and calcareous substrate. Chaparral, coastal scrub, valley and foothill grassland. Occurs between 105 and 855 m.	Perennial bulbiferous herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Jaeger's milk-vetch	*Astragalus pachypus* var. *jaegeri*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky substrates. Occurs between 365 and 915 m.	Perennial shrub	December to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Johnston's rock cress	*Arabis johnstonii*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Often on eroded clay. Chaparral and lower montane coniferous forest. Occurs between 1,350 and 2,150 m.	Perennial herb	February to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Little mousetail	*Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS: 3.1 MSHCP: CA	Valley and foothill grassland, vernal pools (alkaline). Occurs between 20 and 640 m.	Annual herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Little purple monkey flower	*Mimulus purpureus*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Meadows and seeps, pebble (Pavement) plain, upper montane coniferous forest. Occurs between 1,900 and 2,300 m.	Annual herb	May to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland. Often prefers clay soils. Occurs between 30 and 1,530 m.	Annual herb	April to July	**Present**. Long-spined spine flower was observed within Diegan coastal sage scrub and NNG in shallow clay soil lenses. The largest population of long-spined spine flower was observed southeast of the Menifee and Keller Road intersection.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Mesa horkelia	*Horkelia cuneata* ssp. *puberula*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub. Prefers sandy or gravelly soil. Occurs between 70 and 810 m.	Perennial herb	February to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Mojave tarplant	*Deinandra mohavensis*	Federal: None State: None CNPS: 1B.3 MSHCP: None	Chaparral, coastal scrub and riparian scrub. Prefers mesic substrate. Occurs between 640 and 1,600 m.	Annual herb	June to January	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Mud nama	*Nama stenocarpum*	Federal: None State: None CNPS: 2.2 MSHCP: CA	Marshes and swamps (lake margins, riverbanks). Occurs between 5 and 500 m.	Annual / Perennial herb	January to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Munz's onion	*Allium munzii*	Federal: FE State: ST CNPS: 1B.1 MSHCP: None	Mesic and clay soils. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Occurs between 297 and 1,070 m.	Perennial bulbiferous herb	March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Nevin's barberry	*Berberis nevinii*	Federal: FE State: SE CNPS: 1B.1 MSHCP: CA	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky soils. Occurs between 295 and 825 m.	Perennial evergreen shrub	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Orcutt's brodiaea	*Brodiaea orcuttii*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools. Prefers clay soils, sometimes serpentine. Occurs between 30 and 1,692 m.	Perennial herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Parish's brittlescale	*Atriplex parishii*	Federal: None State: None CNPS: 1B.1 MSHCP: CA	Chenopod scrub, playas, vernal pools. Prefers alkaline soils. Occurs between 25 and 1,900 meters.	Annual herb	June to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Parry's spineflower	*Chorizanthe parryi*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky, openings. Occurs between 275 and 1,220 m.	Annual herb	April to June	**Present.** Parry's spine flower was observed within openings within CSS habitats and was generally associated with granitic soils. Observations were often associated with biotic crusts located below granite outcroppings and consistent with undisturbed soils.
Plummer's mariposa lily	*Calochortus plummerae*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Prefers granitic or rocky substrate. Occurs between 100 and 1,700 m.	Perennial bulbiferous herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Prostrate vernal pool navarretia	*Navarretia prostrata*	Federal: None State :None CNPS:1B.1 MSHCP: CA	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. Prefers mesic soils. Occurs between 15 and 1,210 m.	Annual herb	April to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Rainbow manzanita	*Arctostaphylos rainbowensis*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral. Occurs between 225 and 640 m.	Perennial evergreen shrub	January to February	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	Federal :None State: None CNPS: 1B.2 MSHCP: None	Chaparral and coastal scrub. Occurs between 1 and 885 m.	Annual herb	January to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Round-leaved filaree	*Erodium macrophyllum*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Cismontane woodland, valley and foothill grassland. Occurs between 13 and 1,200 m.	Annual herb	March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Salt spring checkered bloom	*Sidalcea neomexicana*	Federal: None State: None CNPS: 2.2 MSHCP: None	Chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub, playas. Prefers alkaline and mesic soils. Occurs between 15 and 1,530 m.	Perennial herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Diego ambrosia	*Ambrosia pumila*	Federal :None State: None CNPS: 1B.2 MSCP: NE	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Often located in disturbed areas. Occurs between 20 and 415 m.	Perennial rhizomatous herb	April to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Federal: FE State: SE CNPS: 1B.1 MSCP: CS	Coastal scrub, valley and foothill grassland and vernal pools. Prefers mesic soils. Occurs between 20 and 620 m.	Annual / Perennial herb	April to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Jacinto Mountains bedstraw	*Galium angustifolium*	Federal: None State: None CNPS: 1B.1 MSHCP: NE	Lower montane coniferous forest. Occurs between 1,350 and 2,100 m.	Annual herb	June to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	Federal: FE State: None CNPS: 1B.1 MSHCP: CA	Playas, valley and foothill grassland and vernal pools. Prefers alkaline substrate. Occurs between 139 and 500 m	Annual herb	April to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Miguel savory	*Satureja chandleri*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Prefers rocky, gabbroic or metavolcanic soils. Occurs between 120 and 1,075 m.	Perennial shrub	March to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Santa Lucia dwarf rush	*Juncus luciensis*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chaparral, great basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Occurs between 300 and 2,040 m.	Annual herb	April to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
slender-horned spineflower	*Dodecahema leptoceras*	Federal: FE State: SE CNPS: 1B.1 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub (alluvial fan). Prefers sandy soil. Occurs between 200 and 760 m.	Annual herb	April to May (uncommonly in March)	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Smooth tarplant	*Centromadia pungens*	Federal: None State: None CNPS: 1B.1 MSCP: CA	Chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland. Prefers alkaline soils. Occurs between 0 and 640 m.	Annual herb	April to September	**Present.** Species was observed in 6 locations throughout the Project survey area. The smooth tarplant was generally associated with or near seasonally mesic sites located in loamy soils
South coast saltscale	*Artiplex pacifica*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Occurs between 0 and 140 m.		March to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Spreading navarretia	*Navarretia fossalis*	Federal: FT State: None CNPS: 1B.1 MSHCP: NE	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools. Occurs between 30 and 1,300 m.		March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Thread-leaved brodiaea	*Brodiaea filifolia*	Federal: FT State: SE CNPS: 1B.1 MSHCP: CA	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools. Prefers clay substrate. Occurs between 25 and 1,219 m.	Perennial bulbiferous herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Vail Lake ceanothus	*Ceanothus ophiochilus*	Federal: FT State: SE CNPS: 1B.1 MSCP: CA	Chaparral habitat. Prefers gabbroic or pyroxenite-rich outcrops. Only three occurrences are known of and occur near Vail Lake. Occurs between 580 and 1,065 m.	Perennial evergreen shrub	February to March	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	Federal: None State: None CNPS: 2.2 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Prefers sandy or gravelly. Occurs between 0 and 2,100 m.	Perennial herb	July to December	**Unlikely to occur.** Species was not detected during focused rare plant surveys..
Wright's trichocoronis	*Trichocoronis wrightii*	Federal: None State: None CNPS: 2.1 MSHCP: NE	Meadows and seeps, marshes and swamps, riparian forest and vernal pools. Prefers alkaline soils. Occurs between 5 and 435 m.	Annual herb	May to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Yucapia onion	*Allium marvinii*	Federal: None State: None CNPS: 1B.1 MSHCP: NE	Chaparral. Prefers clay substrate and openings. Occurs between 760 and 1,065 m.	Perennial bulbiferous herb	April to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

SPECIES LISTING CODES

Legend

Federal (U.S. Fish and Wildlife Service)

FE Federally listed, endangered: species in danger of extinction throughout a significant portion of its range
FT Federally listed, threatened: species likely to become endangered within the foreseeable future
FPE Federally proposed, endangered
FPT Federally proposed, threatened
FPD Federally proposed, delisting

State (California Department of Fish and Game)

SE State listed, endangered: species in danger of extinction throughout a significant portion of its range
ST State listed, threatened: species likely to become endangered within the foreseeable future
FP Fully protected: additional protection to those animals that are rare or possibly facing extinction
SSC Species of Special Concern: administrative designation for vertebrate species that appears vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats

CNPS (California Native Plant Society)

1A Presumed extinct in California
1B Rare, threatened, or endangered in California and elsewhere
2 Rare, threatened, or endangered in California, but more common elsewhere
3 Need More Information - A Review List
4 Limited Distribution - A Watch List
.1 Seriously threatened in California
.2 Fairly threatened in California
.3 Not very threatened in California

Western Riverside County MSHCP

CA Criteria Area Plant
NE Narrow Endemic Plant

APPENDIX B

Plants Observed Onsite

Appendix B: Plants Observed Onsite

PLANTS

Adoxaceae - Elderberry Family
Sambucus mexicana **-** Mexican elderberry

Agavaceae – Agave Family
Yucca schidigera - Mojave yucca
Yucca whipplei - our Lord's candle/chaparral yucca

Aizoacae – Iceplant Family
**Mesembryanthemum nodiflorum – slender-leaved iceplant*

Amaranthaceae – Amaranth Family
**Amaranthus albus* –tumbling pigweed

Anacardiaceae - Sumac Family
Rhus ovata **-** sugar bush
Rhus trilobata – shunkbrush
Toxicodendron diversilobum - poison oak
Schinus molle* **- Peruvian pepper tree/California pepper tree

Apiaceae - Carrot Family
**Conium maculatum* – poison hemlock
Daucus pusillus **-** wild carrot
Foeniculum vulgare* **- fennel

Apocynaceae - Dogbane Family
Asclepias californica – California milkweed
Funastrum cynanchoides spp. *heterophyllum***-** climbing milkweed
Nerium oleander* **- oleander

Arecaceae - Palm tree Family
Washingtonia robusta* **- Mexican fan palm

Asteraceae - Sunflower Family
Achillea millefolium **-** common yarrow
Acourtia microcephala - sacapellote
Anthemis cotula – mayweed
Ambrosia acanthicarpa - annual bursage
Ambrosia psilostachya - western ragweed
Artemisia californica **-** California sagebrush
Artemisia douglasiana – mugwort
Baccharis pilularis – coyote bush
Baccharis salicifolia – mulefat
Brickellia californica - California brickellbush
Carduus pycnocephalus* **- Italian thistle

Appendix B: Plants Observed Onsite

Centaurea melitensis* **- tocalote/malta star thistle
Centromadia pungens ssp. laevis [Hemizonia pungens ssp. leavis] – smooth tarplant
Centaurea solstitialis* **- yellow star thistle
**Chrysanthemum coronarium* - garland chrysanthemum
**Cirsium vulgare* – bull thistle
Conyza canadensis **-** horseweed
Corethrogyne filaginifolia **-** California aster
**Cotula coronopifolia* – brass buttons
Deinandra fasciculata [Hemizonia fasciculata] - clustered tarweed
Deinandra paniculata [Hemizonia paniculata] - San Diego tarweed
**Dimorphotheca sinuata* – African daisy
Ericameria palmeri var. *pachylepis* - grassland goldenbush
Erigeron foliosus var. *foliosus* – leafy daisy
Eriophyllum multicaule - many-stemmed woolly daisy
Eriophyllum confertiflorum – golden yarrow
Filago californica - California filago
Filago gallica* **- narrow**-**leaved filago
Gnaphalium californicum **-** California matchweed
Gnaphalium palustre - lowland cudweed
Hazardia squarrosa **-** saw toothed goldenbush
Hedypnois cretica* **- crete weed
Helianthus annuus **-** western sunflower
Helianthus gracilentus **-** slender sunflower
Hypochaeris glabra – smooth cat's ear
Hemizonia kelloggi – Kellogg's tarweed
Heterotheca grandiflora **-** telegraph weed
Isocoma menziesii var. *menziesii* **-** Menzies' goldenbush
Iva axillaris [Iva axillaris ssp. *robustior]*- western poverty weed
**Lactuca serriola* - prickly lettuce
Lasthenia coronaria - royal goldfields
Logfia filaginoides [Filago californica] - California cottonrose
Logfia gallica [Filago gallica] - daggerleaf cottonrose
Malacothrix saxatilis – cliff aster
**Matricaria discoidea [Chamomilla suaveolens]* - pineapple weed
**Matricaria occidentalis [Chamomilla occidentalis]* - valley pineapple weed
**Oncosiphon piluliferum* - stink net
Osmadenia tenella - osmadenia
Pluchea odorata - marsh fleabane
Pseudognaphalium beneolens [Gnaphalium canescens ssp. beneolens] – everlasting cudweed
Pseudognaphalium californicum [Gnaphalium californicum] - California everlasting
Pseudognaphalium canescens –Wright's cudweed
**Pseudognaphalium luteoalbum [Gnaphalium luteoalbum]* - weedy cudweed
Psilocarphus tenellus – woolly marbles
**Sonchus asper* ssp. *asper* - prickly sow thistle
Sonchus oleraceus* **- sow thistle
Stephanomeria exigua ssp. *exigua* - small wreath plant

Stephanomeria virgata - virgate wreath plant
Stylocline gnaphaloides - everlasting neststraw
Tetradymia comosa **-** cotton-thorn
Uropappus lindleyi – sliver puffs
Xanthium strumarium - cocklebur

Brassicaceae - Mustard Family
**Brassica nigra* - black mustard
**Brassica rapa* - field mustard
Descurainia sophia* **- flix weed
Heliotropium curassavicum - alkali heliotrope
Hirschfeldia incana* **- short pod mustard
Lepidium nitidum **-** shiny pepperweed
**Lepidium latifolium* - broad-leaved peppergrass
Nasturtium officinale [Rorippa nasturtium-aquaticum] - watercress
Raphanus sativus* **- wild radish
Sisymbrium altissimum* **- tumbling mustard
**Sisymbrium irio* - London rocket
**Sisymbrium orientale* - hare's ear cabbage

Boraginaceae - Borage Family
Amsinckia menziesii var. *intermedia* **-** common fiddleneck
Cryptantha intermedia **-** common cryptantha
Cryptantha micrantha var. lepidia - purple root cryptantha
Cryptantha microstachys **-** Tejon cryptantha
Emmenanthe penduliflora - whispering bells
Eriodictyon crassifolium – thick leaf yerba santa
Eucrypta chrysanthemifolia - common eucrypta
Nemophila menziesii - baby blue-eyes
Pectocarya penicillata - northern pectocarya
Phacelia cicutaria - caterpillar phacelia
Phacelia distans - common phacelia
Phacelia minor - Canterbury-bell
Phacelia ramosissima **-** branching phacelia
Plagiobothrys collinus var. *californicus* **-** California popcornflower
Plagiobothrys leptocladus - wire-stemmed popcornflower

Cactaceae –Cactus Family
Opuntia littoralis - coast prickly pear

Caryophyllaceae - Pink Family
**Herniaria hirsuta* ssp. *cinerea* - gray herniaria
Spergularia bocconei* **- Boccone's sand spurrey

Chenopodiaceae – Goosefoot Family
Atriplex argentea ssp. *expansa [Atriplex argentea* ssp. *mohavensis]* - Mojave silver scale

**Atriplex semibaccata* - Australian saltbush
**Atriplex suberecta* - sprawling saltbush
**Bassia hyssopifolia* - fivehook bassia
Chenopodium californicum - California goosefoot
**Dysphania ambrosioides [Chenopodium ambrosioides]* - Mexican tea
**Salsola tragus* - Russian thistle

Cistaceae - Rock-Rose Family
Helianthemum scoparium **-** bisbee peak rushrose

Convolvulaceae - Morning Glory Family
Calystegia macrostegia **-** island false bindweed
**Convolvulus arvensis* - bindweed
Cressa truxillensis - alkali weed
Cuscuta californica - chaparral dodder

Crassulaceae - Dudleya Family
Crassula aquatic **–** common pigmy weed
Dudleya lanceolata **–** lance-leaved dudleya
Dudleya pulverulenta **-** chalk dudleya

Cucurbitaceae - Gourd Family
Cucurbita foetidissima – calabazilla
Cucurbita palmata **-** coyote gourd
Marah fabaceus **–** California manroot
Marah macrocarpus **-** Chilicothe

Cuscutaceae - Dodder Family
Cuscuta californica **-** California dodder/chaparral dodder

Cyperaceae - Sedge Family
Bolboschoenus maritimus [Scirpus maritimus] - alkali bulrush
Cyperus eragrostis - tall umbrella-sedge
Eleocharis macrostachya - perennial spike rush
Eleocharis parishii **-** Parish's spike-rush
Schoenoplectus californicus [Scirpus californicus] - southern bulrush

Dennstaedtiaceae - Bracken Fern Family
Pteridium aquilinum – western bracken fern

Euphorbiaceae - Spurge Family
Chamaesyce albomarginata - rattlesnake spurge
Croton setigerus **–** dove weed
Ricinus communis* **- castor bean

Ericaceae - Heath Family

Xylococcus bicolor **-** mission manzanita

Fabaceae - Pea Family
Astralgus pomonensis - Pomona locoweed
Lotus hamatus **-** grab lotus
Lotus purshianus - Spanish clover
Lotus scoparius **-** deerweed
Lotus strigosus **-** Strigose lotus
Lupinus biocolor **-** miniature lupine
Lupinus microcarpus var. *densiflorus* - dense-flowered chick lupine
Lupinus succulentus - arroyo lupine
Lupinus truncates - truncate lupine /collar lupine
**Medicago lupulina* - black medic
**Medicago polymorpha* - California burclover
**Melilotus indica* - sourclover
**Vicia villosa* - hairy vetch/winter vetch

Fagaceae - Beech Family
Quercus agrifolia **-** coast live oak/ interior live oak
Quercus berberidifolia **-** scrub oak

Frankeniaceae – Frankenia Family
Frankenia salina **-** alkali heath

Geraniaceae - Geranium Family
Centaurium venustum **-** beautiful century
**Erodium botrys* - long-beaked filaree
Erodium cicutarium* **- red**-**stem filaree/stork's bill

Iridaceae - Iris Family
Sisyrinchium bellum **-** blue-eyed grass

Juncaceae - Rush Family
Juncus bufonius **-** common toad rush
Juncus Mexicana - wrinkled rush
Juncus xiphioides iris **-** leaved rush

Lamiaceae - Mint Family
**Marrubium vulgare* - horehound
Salvia apiana **-** white sage
Salvia columbariae - chia
Salvia mellifera **-** black sage
Scutellaria tuberosa - Danny's skullcap
Stachys albens – white hedge-nettle
Stachys ajugoides var. *rigida* – rigid hedge nettle

Lauraceae - Laurel family

**Persea americana* - avocado tree

Liliaceae - Lily Family
Calochortus splendens - splendid mariposa lily
Dichelostemma capitatum – blue dicks

Lythraceae – Loosestrife Family
**Lythrum hyssopifolia* - grass poly

Malvaceae - Mallow Family
Malacothamnus fasciculatus - chaparral mallow
**Malva parviflora* - cheeseweed
Malvella leprosa - alkali mallow
Sidalcea malviflora **-** checker mallow

Myrsinaceae – Myrsine Family
**Anagallis arvensis* - scarlet pimpernel

Myrtaceae - Myrtle family
**Eucalyptus globulus* – blue gum
**Eucalyptus polyanthemos* - silver dollar gum

Nyctaginaceae - Four-O'Clock Family
Mirabilis lavis - wishbone bush

Onagraceae - Evening Primrose Family
Camissonia bistorta **–** California suncup
Camissonia campestris **-** Mojave suncup
Camissonia micrantha - small primrose
Clarkia epilobioides - willow-herb clarkia
Clarkia purpurea **-** purple clarkia
Epilobium brachycarpum - upland willow-herb
Epilobium ciliatum willow-herb

Orobanchaceae - Broomrape Family
Castilleja affinis ssp. *affinis* - coast paintbrush
Cordylanthus rigidus – rigid bird's beak
Galium aparine **-** common bedstraw

Oleaceae - Olive Family
Olea europaea* **- olive tree

Papaveraceae – Poppy Family
Eschscholzia californica - California poppy

Appendix B: Plants Observed Onsite

Plantaginaceae - Plantain Family
Plantago erecta - dwarf plantain / California plantain
Plantago lanceolata* **- English plantain
Veronica peregrina ssp. *xalapensis* - purslane speedwell

Phrymaceae – Lopseed Family
Mimulus aurantiacus - bush monkey flower
Mimulus brevipes - slope semaphore
Mimulus guttatus - seep monkeyflower

Pinaceae - Pine Family
Pinus* spp. **- pine tree

Platanaceae - Plane-tree Family
Platanus racemosa **-** western sycamore

Plumbaginaceae - Plumbago or Leadwort Family
Limonium perezi* **- Canarian sea lavender

Poaceae - Grass Family
Artstida purpurea purple threeawn
Avena barbata* **- slender wild oat
Avena fatua* **- wild oat
Bromus diandrus* **– ripgut brome
Bromus hordeaceus* **- soft chess
Bromus madritensis* ssp. *rubens* **- red brome/foxtail chess
**Bromus rubens* - red brome
**Bromus tectorum* - downey brome
**Cortaderia jubata - pampas* grass
**Crypsis schoenoides* - swamp prickle grass
Deschampsia danthonioides - annual hairgrass
Distichlis spicata - salt grass
Elymus condensatus **-** giant wildrye
Elymus triticoides [Leymus triticoides] - beardless wild rye
**Festuca myuros [Vulpia myuros* var. *hirsuta]* - foxtail fescue
**Hordeum marinum ssp. gussoneanum* - Mediterranean barley
**Hordeum murinum* var. *leporinum* - hare barley
**Koeleria macrantha* - junegrass
**Lolium multiflorum* - Italian rye grass
Lolium perenne* **- perennial ryegrass
Melica imperfect - little California melic grass
Muhlenbergia rigens **-** deergrass
Pennisetum setaceum* **- fountain grass
**Phalaris minor* - little-seed canary grass
**Phalaris paradoxa* - paradox canary grass
Piptatherum miliaceum* **– smilo grass

Poa annua - annual bluegrass
**Polypogon monspeliensis* - annual beard grass/ rabbits foot grass
**Schismus barbatus* - common Mediterranean grass
Stipa coronata [Achnatherum coronatum] - crested needlegrass
Stipa lepida [Nassella lepida] - foothill needlegrass
Stipa pulchra [Nassella pulchra] - purple needlegrass
**Triticum aestivum* - wheat
**Vulpia myuros* - rattail fescue

Polemoniaceae - Phlox Family
Eriastrum sapphirinum - annual woollystar/sapphire woollystar
Gilia angelensis - chaparral gilia
Linanthus dianthiflorus – fringed linanthus
Navarretia atractyloides - holly-leaved skunkweed
Navarretia hamata - hooked navarretia

Polygonaceae - Buckwheat Family
Chorizanthe fimbriata - fringed spineflower
Chorizanthe parryi var. parryi - Parry's spineflower
Chorizanthe polygonoides - knotweed spineflower
Chorizanthe procumbens - prostrate spineflower
Eriogonum fasciculatum var. *fasciculatum* - California buckwheat
Erigonum gracile - slender buckwheat
Lastarriaea coriacea - leatherm-spineflower
**Polygonum argyrocoleon* - Persian knotweed
**Polygonum aviculare ssp. depressum [Polygonum arenastrum]* - common knotweed
Pterostegia drymariodes – pterostegia
**Rumex acetosella* - sheep sorrel
**Rumex crispus* - curly dock
Rumex hymenosepalus - wild rhubarb
Rumex salicifolius var. *salicifolius* - willow leaved dock

Portulacaceae – Purslane Family
Claytonia perfoliata - miner's lettuce

Paeoniaceae – Peony Family
Paeonia californica - California peony

Primulaceae - Primrose Family
**Anagallis arvensis* - scarlet pimpernel

Pteridaceae – Brake Family
Cheilanthes newberryi - cotton fern
Notholaena californica - California cloak-fern
Pellaea andromedifolia - coffee fern
Pellaea mucronata - bird's foot fern

Appendix B: Plants Observed Onsite

Ranunculaceae - Buttercup or Crowfoot Family
Delphinium parryi ssp. *parryi* - Parry's larkspur/blue larkspur

Rhamnaceae – Buckthorn Family
Rhamnus crocea - spiny redberry
Rhamnus californica - California coffeeberry

Rosaceae - Family
Adenostoma fasciculatum **-** chamise
Heteromeles arbutifolia **–** toyon

Rubiaceae – Coffee or Madder Family
Galium angustifolium - narrowly leaved bedstraw
Galium aparine - common bedstraw

Salicaceae – Willow Family
Populus fremontii ssp. fremontii - Fremont cottonwood
Salix gooddingii - Goodding's black willow
Salix lasiolepis - arroyo willow
Salix exigua - sandbar willow
Salix laevigata - red willow

Saururacea – Lizard Tail Family
Anemopsis californica - yerba mansa

Scrophulariaceae - Figwort Family
Antirrhinum coulterianum - white snapdragon
Antirrhinum nuttallianum ssp. *nuttallianum* - Nuttall's snapdragon
Mimulus aurantiacus - bush monkey flower
Mimulus brevipes - slope semaphore
Mimulus guttatus - seep monkeyflower
Penstemon spectabilis **-** showy Penstemon
Penstemon centranthifolius- scarlet bugler
Penstemon heterophyllus- foothill penstemon
Penstemon spectabilis - showy penstemon
Keckiella antirrhinoides ssp. *antirrhinoides* - yellow bush-penstemon
Scrophulraia californica –California figwort
Verbascum virgatum* **- wand mullein

Simaroubaceae - Quassia or Simarouba Family
Ailanthus altissima* **- tree of heaven

Solanaceae-Night Shade Family
Datura wrightii **-** jimson weed
Nicotiana glauca* **- tree tobacco
Solanum xanti **-** chaparral nightshade

Solanum parishii **-** Parish's purple nightshade

Tamaricaceae – Tamarisk Family
**Taxarix ramosissima* – Mediterranean tamarix

Tropaeolaceae - Nasturtium Family
Tropaeolum majus* **- garden nasturtium

Typhaceae – Cattail Family
Typha domingensis – southern cattail
Typha latifolia – broad-leaved cattail

Uticaceae – Nettle Family
Hesperocnide tenella **–** western nettle
Uritca dioica ssp. holosericea **–** hoary nettle

Vitaceae - Wine Family
Vitis girdiana **-** Southern California grape/desert wild grape

Legend
* = Non-native species

APPENDIX C

Soils Types

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
AuC	Auld clay, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
AuD	Auld clay, 8 to 15 percent slopes	Consociation	Not prime farmland
AyF	Auld cobbly clay, 8 to 50 percent slopes	Consociation	Not prime farmland
BfC	Bosanko clay, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
BkC2	Buchenau silt loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
BxC2	Buren loam, deep, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
CaC2	Cajalco fine sandy loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
CaD2	Cajalco fine sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
CaF2	Cajalco fine sandy loam, 15 to 35 percent slopes, erode d	Consociation	Not prime farmland
CbD2	Cajalco rocky fine sandy loam, 5 to 15 percent slopes, eroded	Complex	Not prime farmland
CbF2	Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded	Complex	Not prime farmland
Ce	Chino silt loam, drained	Consociation	Prime farmland if irrigated and drained
Cf	Chino silt loam, drained, saline-alkali	Consociation	Farmland of statewide importance
ChC	Cieneba sandy loam, 5 to 8 percent slopes	Consociation	Not prime farmland
ChD2	Cieneba sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
ChF2	Cieneba sandy loam, 15 to 50 percent slopes, eroded	Consociation	Not prime farmland
CkD2	Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded	Complex	Not prime farmland

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed	Complex	Not prime farmland
Ds2	Domino fine sandy loam, eroded	Consociation	Farmland of statewide importance
Dt	Domino fine sandy loam, saline-alkali	Consociation	Farmland of statewide importance
Du	Domino silt loam	Consociation	Farmland of statewide importance
Dv	Domino silt loam, saline-alkali	Consociation	Farmland of statewide importance
Dw	Domino silt loam, strongly saline-alkali	Consociation	Not prime farmland
EcC2	Escondido fine sandy loam, 2 to 8 percent slopes, erode d	Consociation	Farmland of statewide importance
EcD2	Escondido fine sandy loam, 8 to 15 percent slopes, erod ed	Consociation	Not prime farmland
EcE2	Escondido fine sandy loam, 15 to 25 percent slopes, ero ded	Consociation	Not prime farmland
EfF2	Escondido rocky fine sandy loam, 8 to 50 percent slopes , eroded	Complex	Not prime farmland
EnA	Exeter sandy loam, 0 to 2 percent slopes	Consociation	Farmland of statewide importance
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
EoB	Exeter sandy loam, slightly saline-alkali, 0 to 5 perce nt slopes	Consociation	Farmland of statewide importance
EpA	Exeter sandy loam, deep, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
EwB	Exeter very fine sandy loam, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
FaD2	Fallbrook sandy loam, 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
FfC2	Fallbrook fine sandy loam, 2 to 8 percent slopes, erode d	Consociation	Farmland of statewide importance

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
FkD2	Fallbrook fine sandy loam, shallow, 8 to 15 percent slo pes, eroded	Consociation	Not prime farmland
FwE2	Friant fine sandy loam, 5 to 25 percent slopes, eroded	Consociation	Not prime farmland
FyE2	Friant rocky fine sandy loam, 8 to 25 percent slopes, e roded	Complex	Not prime farmland
GaA	Garretson very fine sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
GaC	Garretson very fine sandy loam, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
GtA	Grangeville fine sandy loam, drained, 0 to 2 percent sl opes	Consociation	Prime farmland if irrigated and drained
GvB	Grangeville fine sandy loam, saline-alkali, 0 to 5 perc ent slopes	Consociation	Farmland of statewide importance
GyA	Greenfield sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
HcA	Hanford coarse sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, erod ed	Consociation	Farmland of statewide importance
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
HnC	Honcut sandy loam, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
HuC2	Honcut loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
LaC	Las Posas loam, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
LaC2	Las Posas loam, 5 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
LaD2	Las Posas loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
LaE3	Las Posas loam, 8 to 25 percent slopes, severely eroded	Consociation	Not prime farmland
LkF3	Las Posas rocky loam, 15 to 50 percent slopes, severely eroded	Complex	Not prime farmland
LoF2	Lodo gravelly loam, 15 to 50 percent slopes, eroded	Consociation	Not prime farmland
LpE2	Lodo rocky loam, 8 to 25 percent slopes, eroded	Complex	Not prime farmland
LpF2	Lodo rocky loam, 25 to 50 percent slopes, eroded	Consociation	Not prime farmland
MmB	Monserate sandy loam, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
MmD2	Monserate sandy loam, 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded	Consociation	Not prime farmland
PaA	Pachappa fine sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
PaC2	Pachappa fine sandy loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
PoC	Porterville clay, 0 to 8 percent slopes	Consociation	Prime farmland if irrigated
PsC	Porterville clay, moderately deep, 2 to 8 percent slope s	Consociation	Farmland of statewide importance

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
PtB	Porterville clay, moderately deep, slightly saline-alka li, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
PvD2	Porterville gravelly clay, moderately deep, 2 to 15 per cent slopes, eroded	Consociation	Farmland of statewide importance
RaA	Ramona sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	Consociation	Prime farmland if irrigated
RaB3	Ramona sandy loam, 0 to 5 percent slopes, severely erod ed	Consociation	Prime farmland if irrigated
RaC2	Ramona sandy loam, 5 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
RtF	Rockland	Consociation	Not prime farmland
VaE3	Vallecitos loam, 8 to 25 percent slopes, severely erode d	Consociation	Not prime farmland
VeC2	Vallecitos loam, thick solum variant, 2 to 8 percent sl opes, eroded	Consociation	Prime farmland if irrigated
VeD2	Vallecitos loam, thick solum variant, 8 to 15 percent s lopes, eroded	Consociation	Not prime farmland
VsC	Vista coarse sandy loam, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
VsD2	Vista coarse sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
VtF2	Vista rocky coarse sandy loam, 2 to 35 percent slopes, eroded	Complex	Not prime farmland
Wg	Willows silty clay, saline-alkali	Consociation	Farmland of statewide importance
WxD2	Wyman fine sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
WyC2	Wyman loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated

Appendix C: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
YbC	Yokohl loam, 2 to 8 percent slopes	Consociation	Not prime farmland
YbD2	Yokohl loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland

APPENDIX D

Smooth Tarplant Location Photographs

Appendix D: Smooth Tarplant Location Photographs



Taken on July 16, 2012

Photo 1:
View of Location 1 looking northwest toward the Domenigoni Channel. Smooth tarplant was observed ruderal vegetation surrounding the Domenigoni Channel.



Taken on May 9, 2012

Photo 2:
View of Location 2 looking north. Low elevations within the vegetated swale were dominated by smooth tarplant.

Appendix D: Smooth Tarplant Location Photographs

 Taken on May 9, 2012	Photo 3: View of Location 3 within seasonal pool, looking north. Smooth tarplant was growing at the pool's edge.
 Taken on June 27, 2012	Photo 4: View of Location 4 at the intersection of Scott and Leon Road. Only one smooth tarplant individual was identified within the survey boundary; however a large population was identified east of the Project survey area.

Appendix D: Smooth Tarplant Location Photographs

 Taken on July 16, 2012	Photo 5: View of the Location 5. The smooth tarplant was associated with ruderal vegetation.
 Taken on July 9, 2012	Photo 6: View of the Location 6. The smooth tarplant was associated with upland areas surrounding channel low-flow.

Appendix C:
Amphibian and Reptile Report

NATURAL RESOURCES ASSESSMENT, INC.

Amphibian and Reptile Surveys
Valley South Subtransmission Project Parcel Analysis
County of Riverside, California

Prepared for:

TRC
123 Technology Drive
Irvine, CA 92618
860 298 6387

Prepared by:

Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, CA 92507
951 686 1141

September 6, 2012

Project Number: TRC11-101

CERTIFICATION

I hereby certify that the statements furnished below and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Karen Kirtland

Date

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Appendix A - Site Photos for Alternative 1 and Alternative 2

Executive Summary

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by TRC to conduct surveys for amphibian and reptile species for the Valley South Subtransmission Project (VSSP) parcel analysis. The parcel analysis is being done for Southern California Edison (SCE).

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of southern Riverside County including the cities of Murrieta, Menifee, Temecula, Wildomar, and the surrounding unincorporated communities within the county. The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) area.

Surveys for amphibian and reptile species were limited to observations made during walking surveys and incidental to small mammal trapping survey work. Surveys were conducted at night and during the day.

A total of 19 individual amphibians and reptiles comprising thirteen species were observed during the survey effort for the project.

Among the species observed were the spadefoot toad, San Diego horned lizard and orange-throated whiptail, all special status species as designated by the MSCHP or the California Department of Fish and Game Special Animals list.

1.0 Introduction

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by TRC to conduct surveys for amphibian and reptile species for the Valley South Subtransmission Project (VSSP) parcel analysis for Southern California Edison (SCE). The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) area.

The surveys were required to supplement the information provided in the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSCHP) and the California Department of Fish and Game Special Animals list.

The surveys were completed by Philippe Vergne of ENVIRA as a subcontractor to NRA, Inc. The study is part of the environmental documentation for the proposed construction of the subtransmission project.

This report describes the existing conditions of the project routes, the general biological resources observed on site, and the results of the amphibian and reptile surveys.

2.1 Philippe Vergne

Mr. Philippe Vergne of ENVIRA has conducted biological assessments in southern California since 1984. His work has included general biological assessments, habitat evaluations, wetland delineations, jurisdictional determinations and focused surveys for plants, reptiles and mammals. He holds a master's degree in animal science from Cal State Pomona. He is also qualified in the development of aquatic farming technology, working with and in developing countries to create new economies, and is a certified scuba diver and dive master under the National Association of Scuba Diving Schools (NASDS) and the National Oceanic and Atmospheric Administration (NOAA).

2.2 Karen Kirtland

Ms. Karen Kirtland of NRA, Inc. has conducted biological assessments since 1982. She has conducted general habitat assessment surveys, general wildlife and plant species surveys, small mammal trapping studies, and focused surveys for special status plant and wildlife species. Her work also includes plant communities surveys and wildlife habitat mapping, as well as preparing jurisdictional determinations and wetland delineations. Her projects include public and private projects ranging from less than an acre to projects as large as 4,600 acres. Her work includes species in desert, coastal and montane biomes.

3.0 Project Description and Site Location

SCE is proposing the construction of the Valley South Subtransmission Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of southern Riverside County including the cities of Murrieta, Menifee, Temecula, Wildomar, and the surrounding unincorporated communities within the county (Figure 1). The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12 kV Substation. The proposed Valley-Triton 115 kV subtransmission line would be approximately 12 miles long.

- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system.

- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.


Survey Area
Los Angeles
San Diego
Tijuana
Sun City
Double Butte
Valley
Domenigoni
Bell Mtn
Lean Mtn
Skinner Reservoir
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0
3,500
7,000
14,000
Feet
Source: ESRI Server
Southern California Edison
Valley South Subtransmission Project
Vicinity Map
Figure 1
TRC

The project consists of two routes: 1) Alternative 1 (11.84 miles) and 2) Alternative 2 (14.25 miles). The survey area included an undefined buffer ranging from 100 to 250 feet, depending on site circumstances from the center line of the alignment.

4.0 Methods

4.1 Literature Review and Records Check

NRA, Inc. reviewed available information on the known special status resources in the area. The literature review included a review of standard field guides and texts on special status and non special status biological resources, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Data Base (CNDDB).
- Information provided by the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) for the proposed routes.

NRA, Inc. also reviewed other available technical information on the biological resources of the site, including previous surveys and discussed recent findings with researchers in the field. Please refer to the Reference section for a list of technical references.

4.2 Habitat Evaluation Surveys

Mr. Philippe Vergne of ENVIRA evaluated the condition of the soils and plant communities on May 29, 2012 in order to assess the best habitat locations for special status amphibian and reptile species. He also noted site characteristics such as topography and evidence of human use of the site.

The determination of habitat quality varies for each species and requires a detailed evaluation of the entire Alternative 1 and Alternative 2 routes. Due to the effort involved, habitat characterization as low, medium and high for the different amphibian and reptile species was not conducted.

4.3 Amphibian and Reptile Surveys

Extensive foot surveys were conducted for amphibian and reptile species. Additional observations made during small mammal trapping work are included in the results. Amphibian survey work included night searches and vocal identification as well as visual surveys during the daylight hours. Reptile survey work was conducted throughout the daylight hours from dawn to dusk.

The surveys were focused on suitable habitats such as undisturbed or undeveloped areas, habitats with scrub and rock cover, including areas suitable for hibernation (Figure 2). Surveys were conducted from May 30 through June 5, 2012; June 8 through June 9, 2012; and June 11 through June 13, 2012.

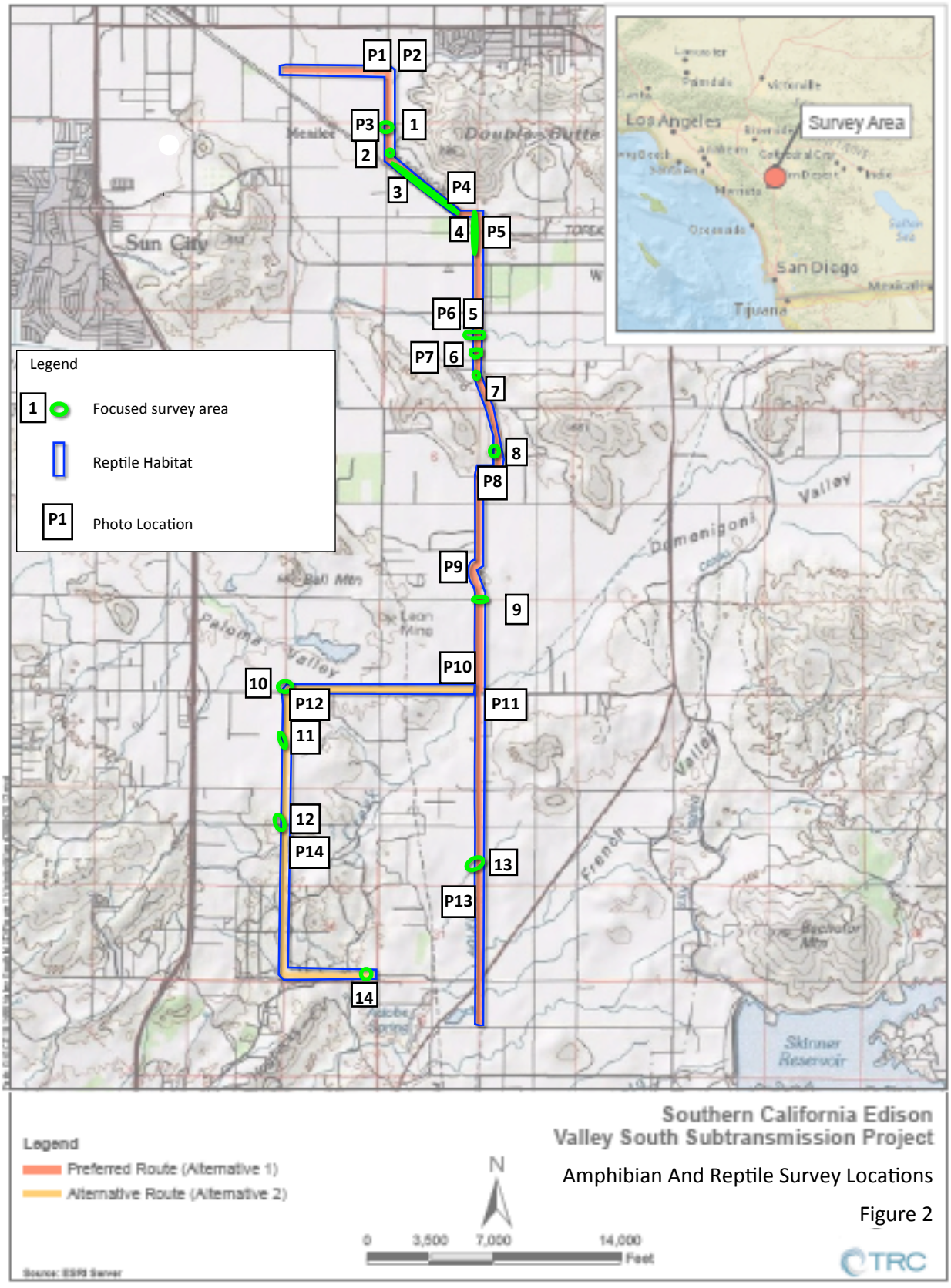
Fourteen areas containing suitable habitat were intensively surveyed along Alternative 1 and Alternative 2. The limits of the survey area varied for each survey locale, and included the limits of potential habitat in and around the project routes (Figure 2 and the ongoing field record data base maintained by TRC).

Notes were taken on the habitat conditions where the surveys were conducted. Weather conditions at the time of the surveys were also noted. Representative photographs of habitat were taken.

5.0 Results

5.1 Literature Review Results for Special Status Biological Resources

Five special status species were identified by the CNDDB as potentially present in the vicinity of the project routes. They are the western spadefoot (*Spea hammondi*), western pond turtle (*Emys marmorata*),


Survey Area
Los Angeles
San Diego
Tijuana
Sun City
Double Butte
Domenigoni Valley
Skinner Reservoir
Legend
1 Focused survey area
Reptile Habitat
P1 Photo Location
P1
P2
P3
1
2
3
P4
4
P5
P6
5
P7
6
7
8
P8
P9
9
P10
10
P12
P11
11
12
P14
13
P13
14
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0
3,500
7,000
14,000
Feet
Source: ESRI Server
Southern California Edison
Valley South Subtransmission Project
Amphibian And Reptile Survey Locations
Figure 2
TRC

San Diego (coast) horned lizard (*Phrynosoma blainvillii*), orange-throated whiptail (*Aspidoscelis hyperythra*), and the northern red diamond rattlesnake (*Crotalus ruber ruber*).

The WRCMSHCP identifies the western spadefoot as the only species of concern for this area.

5.1.1 Western Spadefoot

The western spadefoot is a relatively small toad, with adult sizes ranging from 1.5 to 2.5 inches in length from snout to vent (Stebbins 1954). It is found in a variety of locales, mostly in lowland areas, but has been observed on the lower slopes of mountain ranges up to 3,000 feet and occasionally higher (Stebbins 2003).

Habitats preferred by this species include mixed woodlands, grasslands, coastal sage scrub and chaparral plant communities. Within these plant communities, the western spadefoot is found in sandy washes and along river floodplains, alluvial fans and alkali flats (California Herps 2012).

The western spadefoot is a nocturnal and secretive species, even in upland habitats. It is primarily a terrestrial species, using water only for breeding. A critical element of any habitat is the presence of rainpools that do not support bullfrogs, crayfish or fish, which prey upon tadpoles of this species.

The water must remain for a minimum of 30 days for larvae to survive (California Herps 2012). Females typically lay 300 to 500 eggs in groups of 10 to 42, attached to stalks of underwater vegetation or detritus (Stebbins 1954). Hatching occurs usually within three to four days, but some individuals may not hatch until six days later. Depending upon the quality and duration of the pool, tadpoles may transform into adults anywhere from four to eleven weeks later. Young leave the pool during the night to avoid desiccation and detection by predators (Stebbins 1954).

The spadefoot survives hot, dry weather conditions by burrowing underground and remaining dormant. This species emerges in response to suitable weather conditions, usually from January to May, when rainfall is more frequent. Individuals may also emerge at other times of the year if sufficient rainfall occurs (Stebbins 1954, California Herps 2012).

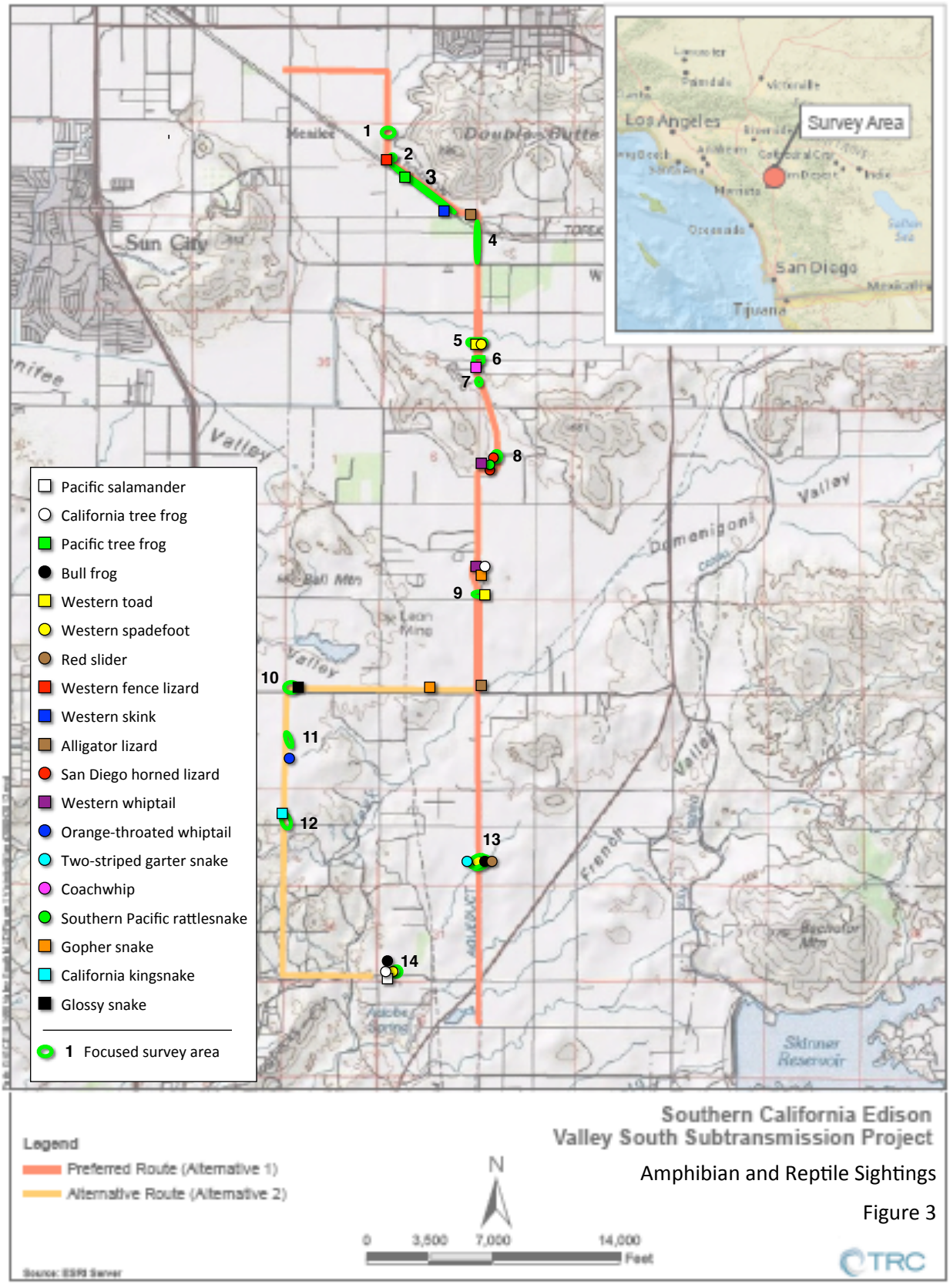
The diet of the western spadefoot includes invertebrates such as beetle, flies, ants, and earthworms (Stebbins 1954, 2003).

The historical range for this species included most of the Central Valley, the bordering foothills and Coastal Ranges south of Monterey Bay, and south into northwestern Baja California. The current range as of 2003 is believed to be limited to coastal Orange County, western Riverside County and inland San Diego County, with one other locale near Black Butte Reservoir, Glenn County (Stebbins 2003). Most of the remaining range has been lost (up to 80 percent estimated in 2003) from loss of pools, conversion of lowland habitat and mosquito abatement practices (Stebbins 2003).

As a result of habitat loss, degradation and destruction, the western spadefoot has been designated as a Species of Special Concern (SSC) by the California Department of Fish and Game, as a near threatened species by the International Union for the Conservation of Nature (2012), and as a Sensitive Species by the Bureau of Land Management (2006)

Project Findings

Two western spadefoots were found along Alternative 1 and Alternative 2. One western spadefoot was found in Area 5 and one in Area 13 (Figure 3, Table 2).


Survey Area
Los Angeles
San Diego
Tijuana
Sun City
Double Butte
Valley
Domenigoni
Skinner Reservoir
Pacific salamander
California tree frog
Pacific tree frog
Bull frog
Western toad
Western spadefoot
Red slider
Western fence lizard
Western skink
Alligator lizard
San Diego horned lizard
Western whiptail
Orange-throated whiptail
Two-striped garter snake
Coachwhip
Southern Pacific rattlesnake
Gopher snake
California kingsnake
Glossy snake
1 Focused survey area
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0 3,500 7,000 14,000
Feet
Southern California Edison
Valley South Subtransmission Project
Amphibian and Reptile Sightings
Figure 3
TRC

5.1.2 Western Pond Turtle

The western pond turtle is a small reptile ranging from five to six inches in length. Preferred habitat for the southwestern pond turtle includes well-watered areas with an abundance of herbaceous aquatic vegetation, basking and refugia sites (Stebbins 2003 California Herps 2012). Basking sites includes downed, partially submerged logs, mudbanks, and vegetation mats. Refugia sites include areas where turtles can hide, such as submerged vegetation mats, soft soils and overhanging banks.

This species occupies a variety of water habitats with muddy and rocky bottoms (Stebbins 2003 and California Herps 2012). Suitable habitat includes marshes, ponds, lakes, creeks, rivers, streams, and irrigation ditches (Stebbins 1954).

The southwestern pond turtle has been known to use terrestrial habitats away from water. This use is mostly during summer and winter, and is for a number of purposes, including searching for mates by males, egg deposition by females, and individuals overwintering under leaf litter, and overland dispersal.

Southwestern pond turtle feeds on a variety of foods, including aquatic vegetation, insects and carrion (Stebbins 2003). Breeding takes place from mid to late spring. Females usually lay a clutch of up to 11 eggs in sand or loose soil not far from water.

Southwestern pond turtles are active year round, especially in the southern part of their range. Animals in the northern part of the range overwinter more frequently.

The western pond turtle was formerly found in suitable habitat west of the Sierra Nevada and Cascades ranges, as well as occurring in isolated populations in Nevada and possibly Idaho. In California, the historical range of the southwestern pond turtle (*Emys marmorata pallida*) extended from the San Francisco Bay area south along the coastal ranges and Transverse Ranges into Baja California (Stebbins 2003). There are also populations in the southern San Joaquin Valley. The Baja California populations probably have been extirpated (California Herps 2012).

All reptiles, including the southwestern pond turtle, are in decline due to the loss and degradation of habitat. The southwestern pond turtle is listed as species of special concern by the CDFG, a Sensitive species by the U.S. Forest Service and the Bureau of Land Management, and as a vulnerable species by the International Union for the Conservation of Nature (California Department of Fish and Game 2012).

Project Findings

No suitable habitat was found for the western pond turtle on either of the two proposed routes.

5.1.3 San Diego Horned Lizard

The San Diego horned lizard is a medium-sized lizard, ranging from three to four inches in length from snout to vent. The San Diego horned lizard is typically found on or near loose sandy soils in a wide variety of habitats (Stebbins 1954, 2003). Habitats preferred by this species include annual grassland, coastal sage scrub, alluvial fan scrub, broadleaf woodland and coniferous forest. It is locally common in lowland areas along sandy washes with low scattered shrubs, such is found in alluvial fan scrub.

The principal food item of the horned lizard is native ants, such as those belonging to the carpenter and harvester ant groups. It will feed on other, similar sized insect prey. Other habitat requirements seem to include warm conditions, such as open areas for sunning and patches of loose soils for burial (Stebbins 2003).

The San Diego horned lizard is active year round (Stebbins 2003). The greatest level of activity is during the warmer seasons of the year, when ant populations are most active above ground. The horned lizard is less active during the cooler periods of the year, mainly from August to October (Stebbins 2003).

Like most reptiles, the San Diego horned lizard is egg-bearing, laying six to 21 eggs anywhere from May to June. Young emerge from the egg around August to September (Stebbins 1954).

The San Diego horned lizard is a subspecies of the coast horned lizard (*Phrynosoma coronatum*) which is found throughout most of California west of the desert and the Cascade-Sierra highlands. Populations of the coast horned lizard extend into Baja California. The coast horned lizard is not found in humid areas such as the northwestern U.S. (Stebbins 1954, 2003).

The historical distribution for the San Diego horned lizard includes the coastal and inland areas of southern California from Ventura County to Baja California (Stebbins 2003). Known localities include the San Bernardino Valley area of San Bernardino County, with some populations extending through the Cajon Pass into the Mojave Desert. Riverside County populations include all of the coastal area of Riverside, extending through the Banning Pass and Anza area into the Coachella Valley (California Natural Diversity Data Base reports for the Victorville and Palm Spring areas).

Fragmentation and loss of habitat to urban development and agricultural practices have contributed to the serious reduction in populations for this species. As a result, the San Diego horned lizard is listed as a species of special concern by the California Department of Fish and Game and as (2012). It is listed as a species of least concern by the International Union for the Conservation of Nature (California Department of Fish and Game 2012).

Project Findings

One individual San Diego horned lizard was found in Area 1 (Figure 3). Two individuals were observed in Area 4, and possibly one in Area 5 during the surveys of the Alternative 1 and Alternative 2 routes.

5.1.4 Orange-throated Whiptail

The orange-throated whiptail is a small lizard, ranging from two to 2.75 inches in length from snout to vent. The orange-throated whiptail inhabits washes and similar sandy areas where there is a mix of rocks and patches of brush, particularly rocky hillsides. Whiptails are found along washes, streams, terraces and similar sandy areas in coastal chaparral, thornscrub, and streamside habitats (Stebbins 1954, 2003).

The orange-throated whiptail is a wary diurnal species, highly sensitive to movement and of rather secretive habits (Stebbins 1954). Shelter is found in rodent burrows or under bushes (Stebbins 1954).

Prey items for this species include insects such as termites and beetles, as well as spiders. It is active year round. Breeding generally takes place in spring, with clutches of one to four eggs are laid in June to July (Stebbins 2003).

The historical range of the orange-throated whiptail included the inland and coastal valleys of Riverside, Orange, and San Diego counties south to Baja California (Stebbins 2003). Fragmentation and loss of habitat to urban development and agricultural practices have contributed to the serious reduction in populations for this species. As a result, the orange-throated whiptail is listed as a species of special concern by the California Department of Fish and Game (2012). It is considered a species of least concern by the International Union for the Conservation of Nature (California Herps 2012).

Project Findings

One orange-throated whiptail was found in Area 7 (Figure 3, Table 2) during the surveys of the Alternative 1 and Alternative 2 routes.

5.1.5 Northern Red Diamond Rattlesnake

The northern red diamond rattlesnake is a large-bodied snake ranging from 30 to 65 inches in length. It prefers rocky areas amid dense grassland and scrub vegetation. Known habitats include arid scrub, coastal chaparral, oak and pine oak forest. It is also found in cultivated areas with suitable habitat. On the desert side of the mountains, the northern red diamond rattlesnake can be found on rocky desert flats.

The northern red diamond rattlesnake needs rodent burrows, cracks in rocks or other surface material for shelter. It is a primarily nocturnal and crepuscular species during hot periods, but is active diurnally in more moderate temperatures or in shaded areas. It is not active during the cooler months of winter.

Prey includes rodent and lizard species, as well as small mammals and birds. The rattlesnake bears live young, born any time from July through September.

The historic range for the northern red diamond rattlesnake extends from the coast east to the Morongo Valley and south along both sides of the Peninsular Ranges to the middle of Baja California (Stebbins 2003). The current range remains relatively unchanged, although the availability of suitable habitat within that range has been severely reduced by development.

The northern red diamond rattlesnake is listed as a Species of Special Concern by the California Department of Fish and Game (2012). It is considered apparently secure by the International Union for the Conservation of Nature (California Herps 2012).

Project Findings

No northern red diamond rattlesnake was observed along either of the two routes.

5.2 Soils and Topography

The soils along the two routes are derived from a variety of sources, but most are loams, ranging from fine sandy loams in the lower, flatter areas to rocky sandy loams in the hilly areas. There are also pockets of clay soils, mostly in flat areas and low ground. Topography ranges from very flat to somewhat hilly.

5.3 Plant Communities

There is a variety of plant communities along the two routes. The survey areas include riparian and pond communities suitable for amphibians, and scrub and rocky communities suitable for reptiles. Please see Appendix A for site photos.

5.4 Amphibian and Reptile Surveys

5.4.1 Weather Conditions

Weather conditions did not vary much during the course of the surveys. During the surveys of Alternative 1 and Alternative 2, low temperatures were mostly in the mid fifties to low sixties degrees Fahrenheit. High temperatures were mostly in the eighties degrees Fahrenheit. Skies were variably cloudy but mostly clear. The lunar cycle was in the first quarter on May 29, 2012, becoming a full moon on June 4, 2012 and was in the last quarter on June 13, 2012 (Table 1).

5.4.2 Survey Results

A total of 19 individual amphibians and reptiles comprising thirteen species were observed during the survey effort.

Geographical Information System (GPS) location data are provided in Table 2 for all special status amphibian and reptile species. Survey results for all amphibian and reptile species are given in Table 3.

Table 1. Weather Conditions for Alternative 1 and Alternative 2

Date	Temperatures (High) (F)	Temperatures (Low) (F)	Cloud Cover	Wind Speed (miles per hour)	Moon Phase
Amphibian Surveys					
6/1/12	90	60	20 percent	<3	Waxing gibbous
6/4/12	79	61	Clear	<5	Waxing gibbous
6/5/12	80	61	Clear	<5	Full
6/11/12	85	56	Clear	<3	Last quarter
6/12/12	89	61	Clear	<3	Last quarter
6/13/12	86	57	Clear	<3	Waning crescent
Reptile Surveys					
5/30/12	86	61	Clear	0	Waxing gibbous
5/31/12	91	58	Clear	0	Waxing gibbous
6/2/12	85	60	Morning fog	<3	Waxing gibbous
6/3/12	83	57	Morning fog	<3	Near full
6/4/12	79	61	Clear	<5	Full
6/5/12	80	61	Clear	<5	Full
6/8/12	85	60	Clear	<3	Waning gibbous
6/9/12	79	57	Clear	<3	Waning gibbous
6/11/12	85	56	Clear	<3	Last quarter
6/12/12	89	61	Clear	<3	Last quarter

Table 2. Geographical Information System Data for Special Status Species Observed

	Universal Transverse Mercator Coordinates (UTM)					
	Western Spadefoot	San Diego Horned Lizard	Orange-throated Whiptail Lizard	Two-striped Garter Snake	California Kingsnake	Southern Pacific Rattlesnake
Sheet Reference	*Scaphiopus hammondii*	*Phrynosoma coronatum blainvillii*	*Aspidoscelis hyperythrus*	*Thamnophis hammond*	*Lampropeltis getula*	*Crotalus viridis helleri*
Area 1		11S0489122 3730449				
Area 4		11S0487321 3731673				

Table 2. Geographical Information System Data for Special Status Species Observed

	Universal Transverse Mercator Coordinates (UTM)					
	Western Spadefoot	San Diego Horned Lizard	Orange-throated Whiptail Lizard	Two-striped Garter Snake	California Kingsnake	Southern Pacific Rattlesnake
Area 5	11S0488849 3278454					
Area 7			11S048882 3724373			
Area 13	11S0488870 3717761					

Table 3. Amphibian and Reptile Survey Results for Alternative 1 and Alternative 2

	Pacific Salamander	Pacific Tree Frog	California Tree Frog	Bull Frog	Western Spadefoot	Western Toad	Red-eared Slider	Western Pond Turtle
Sheet Reference	*Batrachoseps pacificus major*	*Pseudacris regilla*	*Hyla cadaverina*	*Rana catesbeiana*	*Scaphiopus hammondii*	*Bufo boreas*	*Pseudemys scripta*	*Emys marmorata*
Area 1								
Area 2		1 V						
Area 3								
Area 4								
Area 5			1		1	1		
Area 6								
Area 7								
Area 8								
Area 9						1		
Area 10								
Area 11								
Area 12								
Area 13				1	1		1	
Area 14	1		1	1				

H =Suitable habitat present, no sightings
N = Number of sighting
V =Vocalization
S = Horned lizard scat, not definitive as to species

Table 3 (cont.) Amphibian and Reptile Survey Results for Alternative 1 and Alternative 2

Sheet Reference	San Diego Horned Lizard *Phrynosoma coronatum blainvillii*	Side-Blotched Lizard *Uta stansburiana*	Western Fence Lizard *Sceloporus occidentalis*	Western Skink *Eumeces skiltonianus*	Alligator Lizard *Gerrhonotus multicarinatus*	Western Whiptail *Cnemidophorus tigris*	Orange-throated Whiptail Lizard *Aspidoscelis hyperythrus*
Area 1	H	1	1				
Area 2		1		1	1		
Area 3		1					
Area 4	2	1				1	
Area 5	S	1				1	
Area 6		1			1		
Area 7		1					1
Area 8		1					
Area 9		1					
Area 10		1					
Area 11		1					
Area 12		1					
Area 13		1					
Area 14							

H =Suitable habitat present, no sightings
N = Number of sighting
V =Vocalization
S = Horned lizard scat, not definitive as to species

Table 3 (cont.) Amphibian and Reptile Survey Results for Alternative 1 and Alternative 2

Sheet Reference	Coachwhip *Masticophis flagellum*	California Kingsnake *Lampropeltis getula*	Gopher Snake *Pituophis melanoleucus*	Glossy Snake *Arizona elegans*	Two-striped Garter Snake *Thamnophis hammond*	Southern Pacific Rattlesnake *Crotalus viridis helleri*
Area 1						
Area 2						
Area 3	1					
Area 4						1
Area 5			1			
Area 6			1	1		
Area 7		1	1			
Area 8						

Table 3 (cont.) Amphibian and Reptile Survey Results for Alternative 1 and Alternative 2

Sheet Reference	Coachwhip *Masticophis flagellum*	California Kingsnake *Lampropeltis getula*	Gopher Snake *Pituophis melanoleucus*	Glossy Snake *Arizona elegans*	Two-striped Garter Snake *Thamnophis hammond*	Southern Pacific Rattlesnake *Crotalus viridis helleri*
Area 9						
Area 10						
Area 11						
Area 12						
Area 13					1	
Area 14						

H =Suitable habitat present, no sightings
N = Number of sighting
V =Vocalization
S = Horned lizard scat, not definitive as to species

6.0 Findings and Recommendations

Both alternatives have the potential to impact special status species to varying degrees. Impacts to special status species may be significant and may require mitigation if take cannot be avoided. If impacts cannot be avoided, NRA, Inc. recommends that loss of habitat identified as significant under the California Environmental Quality Act should be mitigated at a ratio and in a manner to be determined through consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

NRA, Inc. recommends one of two possible mitigation measures for loss or damage to habitat:

1. Purchase of off site occupied habitat in the vicinity of the project, with the purchased habitat protected in perpetuity through conveyance to U.S. Fish and Wildlife Service, the California Department of Fish and Game, or some other acceptable ownership;

2. Provide a contribution of land or money to a program of habitat preservation comparable to the amount of habitat lost.

The finding for all special status species surveys are invalid after one year, especially if no positive findings are made. Therefore, we recommend a preliminary construction survey be conducted prior to the start of actual construction within habitat for special status species. At that time, any habitat for special status species requiring to be aside or avoided shall be identified.

Mitigation measures recommended for implementation during construction include:

1. The project proponent shall provide the U.S. Fish and Wildlife Service and the California Department of Fish and Game with the name(s), address(es), and phone number(s) of a field contact representative (FCR) responsible for overseeing compliance with protective measures for listed and special status species, and any biological monitor(s) contracted for project implementation. The FCR and biological monitor(s) shall have the authority to halt/suspend all associated project activities to avoid or minimize the unanticipated incidental take of listed species.

2. The project proponent shall ensure that a biological monitor, approved by the U.S. Fish and Wildlife Service and the California Department of Fish and Game, is present prior to and during

initial clearing activities, to fully minimize the amount of disturbance by detecting any individuals or sign of listed and special status species occurring within the project area, assuring restrictive markers are in place and obeyed, and construction guidelines and Best Management Practices (BMPs) are followed. The biologist must have all valid permits and certifications.

3. The project proponent shall ensure that the limits of construction are marked prior to ground-disturbing activities and made clearly visible to personnel on foot and to heavy equipment operators. The biological monitor shall verify that the limits of construction have been properly staked and are readily identifiable. The movement of employees, construction contractors and subcontractors, and equipment, including ingress and egress of equipment and personnel, shall be limited to existing roads and designated construction limits.

4. Access to the disturbance site shall be via pre-existing access routes to the greatest extent possible.

5. Equipment storage, fueling, and staging areas will be located outside of native habitat; generally along dirt access roads and other developed areas.

6. All project personnel shall be required to attend an environmental awareness training program that will include discussion of the natural history of the special status species identified and the required measures to avoid and/or minimize project impacts.

7. Within the construction limits the project proponent shall ensure that all excavated, steep-walled holes or trenches more than two feet deep are backfilled at the close of each working day to prevent animals from entering the construction area and becoming trapped.

8. Trenches, holes, and any construction equipment stored at the site overnight shall be inspected for trapped animals each morning prior to the onset of construction. Any animals discovered shall be removed from the trench, hole, or equipment by the permitted biologist and released outside the construction limits.

9. The project proponent shall ensure all equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas located outside of potential habitat for special status species.

10. The project proponent shall notify the U.S. Fish and Wildlife Service and the California Department of Fish and Game within 3 working days should any federally listed species be found dead or injured onsite for further instruction. Notification must include the date, time, and location of the carcass, and any other pertinent information.

11. The project proponent shall prohibit the use of rodenticides, herbicides, insecticides, or other chemicals that could potentially harm special status species within or adjacent to the project site.

12. Upon completion of the project, the project proponent shall submit to the U.S. Fish and Wildlife Service and the California Department of Fish and Game a report that summarizes the environmental compliance activities implemented during the construction period, any observations of listed species or their sign onsite or in the vicinity of construction activities, any changes in the project description or implementation schedule, and non-compliance/incidental reports and the resolution of each reported situation.

7.0 References

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Appendix A - Site Photos for Alternative 1 and Alternative 2



Photo 1. Agricultural fields at the corner of the northern segment of Alternative 1. Looking west.



Photo 2. Agricultural fields at the corner of the northern segment of Alternative 1. Looking south.



Photo 3. Scrubby rocky habitat. At the western base of the Double Butte area. Looking northeast.



Photo 4. Scrubby rocky habitat. At the southern base of the Double Butte area. Looking southeast.



Photo 5. Agricultural area. Just north of Simpson Road looking south.



Photo 6. Pond habitat in Salt Creek north of Domengoni. Looking west.



Photo 7. Annual grasslands north of Domengoni Parkway and scrub habitat south of Domengoni Parkway. Looking south.



Photo 8. Annual grassland at curve just south of Domengoni Parkway. Looking south.



Photo 9. Mixed grassland and rocky habitat. Along the bend in Leon Road south of Domenigoni Parkway.



Photo 10. At the northeast corner of Scott Road and Leon Road. Rural residential. Looking west.



Photo 11. At the northeast corner of Scott Road and Leon Road. Start of residential development. Looking south.



Photo 12. Between residential development.



Photo 13. Riparian habitat. Looking south.
Northwest of the junction of State Route 79 and May Gillis Boulevard along Alternative 1.



Photo 14. Along the south leg of Alternative 2.



Photo 1. Agricultural area. Along Craig Road looking west.



Photo 2. Agricultural fields along Craig Road. Looking east.



Photo 3. Agricultural fields. Along Craig Road looking east.



Photo 4. Industrial site. Along State Route 79. Looking south.



Photo 5. Agricultural fields. Along Keller Road, looking north.



Photo 6. Agricultural operation. Along Keller Road near State Route 79. Looking east.



Photo 7. Scrub habitat along recontoured slope. Washington Street looking south.



Photo 8. Ponded area. At the junction of State Route 79 and Algarve Avenue. Looking southeast.



Photo 9. Ponded area with grasses. At the junction of State Route 79 and Algarve Avenue.

Appendix D:
Results of Raptor Nest Surveys on Southern California Edison's Proposed Valley South Subtransmission Project Located in Western Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

July 10, 2012

Mr. John C. Lovio
Senior Biologist
TRC Solutions, Inc.
4393 Viewridge Ave., Suite A
San Diego, California 92123

[via email]

Subject: Results of raptor nest surveys on Southern California Edison's proposed Valley South Subtransmission Line Project located in western Riverside County, California

Dear Mr. Lovio:

Bloom Biological, Inc. (BBI) was retained by TRC Solutions, Inc. (TRC) to survey for raptor nests along the Preferred (Alternative 1) and Alternative (Alternative 2) routes of Southern California Edison's (SCE) proposed Valley South Subtransmission Project (VSSP) located in western Riverside County, California. During BBI's three surveys along the alignment, 14 raptor nests (all belonging to Red-tailed Hawk [*Buteo jamaicensis*]) were detected within approximately one half mile of the proposed alignment. This letter report documents methods and provides details on the results of BBI's survey.

PROJECT DESCRIPTION

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of southern Riverside County including the cities of Murrieta, Menifee, Temecula, Wildomar, and the surrounding unincorporated communities within the county. The following points briefly describe the components included in the Proposed Project:

- Construction of a new 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115 kV Substation in the City of Murrieta and terminating near SCE's existing Auld 115/12 kV Substation in the City of Menifee. The proposed Valley South Subtransmission Line would be approximately 12 miles in length. The alternative Valley South Subtransmission Line would be approximately 14 miles.

- Installation of new fiber optic cable and communication equipment to connect the Proposed Project to SCE's existing telecommunication system.

- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

SURVEY AREA DESCRIPTION

A variety of biological resource surveys are being conducted along the proposed preferred and alternative VSSP alignments. In general, the surveys are to be conducted within a 200 to 500-foot corridor depending on if the areas are developed or undeveloped along the routes. For the purposes of standardized map-making, a 250-foot buffer is shown on the attached exhibit (Exhibit 1) and this is referred to herein as the "survey area".

The survey area is comprised of approximately 1,065 acres (431 hectares) located within and in the vicinity of the City of Menifee, Riverside County, California (see Figure 1). On the Public Land Survey System, the survey area is located in all or portions of Sections 1, 2 of Township 07S, Range 03W; Sections 5, 6 of Township 07S, Range 02W; Sections 13, 14, 23, 24, 25, 26, 35, 36 of Township 06S, Range 03W; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31 of Township 06S, Range 02W; Sections 13, 14, 24 of Township 05S, Range 03W; and Sections 18, 19, 30, 31, 32 of Township 05S, Range 02W of the US Geological Survey's 7.5-minute *Bachelor Mountain, Murrieta, Romoland* and *Winchester* quadrangles (Exhibit 1). Elevations in the survey area range from 1,300 feet above mean sea level (amsl) in the south to 1,530 feet amsl in the north. The nearest major road to the survey area is Winchester Rd.

The proposed project occurs within a predominantly rural landscape with low-density human habitation, extensive agriculture, localized dense suburban development, and areas of undeveloped native vegetation. Numerous native and non-native trees, in conjunction with extensive foraging habitat, provide potential nesting substrates for raptors throughout the survey
area.

The Proposed Project occurs within the area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which was approved in 2003 as a large-scale, multi-jurisdictional, multiple-species planning mechanism pursuant to the Natural Communities Conservation Planning (NCCP) Act of 1991. The MSHCP also satisfies the requirements of a Habitat Conservation Plan (HCP) for federally listed species under the Endangered Species Act. The MSHCP, which conserves species and habitats as well as accounts for human development, defines "coverage" of species under the planning process as the anticipated adequate, long-term conservation of those species under full implementation of the plan.

Figure 1. Project location relative to the state (left) and county (right).



METHODS

BBI Field Manager and raptor expert Scott Thomas conducted surveys for raptor nests within one-half mile of the VSSP alignment on May 17, 22 and June 4, 2012. Weather conditions during the survey were mild, with temperatures ranging from 60 to 82° Fahrenheit (see Table 1), with no fog or rain. Surveys were conducted by slowly driving on public roads in the survey area, with some area visitation on foot where road access wouldn't allow sufficient examination of wooded or hillside areas. All large nests, both from raptors and corvids, were documented during the survey. Documentation consisted of collecting waypoints with a handheld GPS unit and associated notes about the nest observations that were consistent with the requirements of BBI's resource database. Data collected included species, substrate,

number of eggs or young, nest height and additional notes. Several of the nests were photographed. Some nest coordinates were projected due to access issues with private properties.

Table 1. Field survey dates, times and weather conditions.

Date	Time	Weather	Biologists
05/17/12	1100-1600h	Start: 81° F, 0% cloud cover, Breeze out of the SW End: 82° F, 0% cloud cover, Light Wind out of the SW No rain; No fog; No snow	Scott Thomas
05/22/12	0830-1230h	Start: 64° F, 1-25% cloud cover, Calm out of the SW End: 73° F, 0% cloud cover, Calm out of the SW No rain; No fog; No snow	Scott Thomas
06/04/12	0730-1230h	Start: 60° F, 100% cloud cover, Calm out of the N End: 67° F, 100% cloud cover, Calm out of the N No rain; No fog; No snow	Scott Thomas

RESULTS AND DISCUSSION

A total of 14 Red-tailed Hawk, two Common Raven (*Corvus corax*), and one American Crow (*C. brachyrhychos*) nests were detected during BBI surveys. During the May 17 survey, Thomas detected five active Red-tailed Hawk nests, one possible inactive Red-tailed Hawk nest and one active Common Raven nest. During the May 23 survey, Thomas detected four new Red-tailed Hawk nests and two new Common Raven nests. During the June 4 survey, Thomas detected four new Red-tailed Hawk nests. The nest locations are shown on Exhibit 2 and details about these nests are provided in Table 2.

As of June 4, 2012, most nests identified during the three surveys had fledged, although four of the Red-tailed Hawk nests still contained one to several pre-fledged chicks and all nests would likely continue to be used by fledglings as roosting locations until at least late summer. Two of the nests (938 and 940) are located on utility poles that may be affected by the proposed project.

Table 2. Raptor nest survey results.

#	Easting	Northing	Species	Substrate	Contents	Quan.	Height (ft)	Notes
700	488911	3720758	Red-tailed Hawk	Tree	Young	2	40	2 chicks, 3-4 weeks old
701	488178	3717747	Red-tailed Hawk	Tree	Young	2	50	Eucalyptus tree, 2 or 3 , 5 week old chicks
703	489094	3720949	Red-tailed Hawk	Tree	Unknown	0	60	In eucalyptus tree, possibly inactive
704	489005	3724298	Red-tailed Hawk	Tree	Young	2	60	In Eucalyptus, 2-3 young, 4 weeks old
705	489170	3727299	Red-tailed Hawk	Tree	Young	2	80	Eucalyptus, two 5.5 week old chicks
706	489286	3728900	Red-tailed Hawk	Tree	Young	2	60	Eucalyptus with two, 5.5 week old chicks
936	489372	3729489	Red-tailed Hawk	Tree	Young	2	70	Behind private homes
937	488129	3730446	Common Raven	Tree	Empty	0	60	Inactive
938	487360	3731317	Red-tailed Hawk	Utility Pole	Young	2	50	At least 2 fledged
939	489078	3725982	Red-tailed Hawk	Tree	Young	1	60	At least one, 5 weeks old
940	488625	3726969	Red-tailed Hawk	Utility Pole	Young	2	65	At least 2 chicks, 4-4.5 weeks old
941	488770	3725609	Common Raven	Tree	Empty	0	45	Inactive
995	485484	3721735	American Crow	Tree	Empty	0	60	Eucalyptus

996	485949	3719753	Red-tailed Hawk	Tree	Young	3	60	(3) 5.5 week old chicks, near fledging
997	488455	3729605	Red-tailed Hawk	Tree	Young	1	5	5 week old in euc
998	485573	3718793	Red-tailed Hawk	Tree	Empty	0	45	Fledged at least 2 chicks from willow - see photo
999	488675	3725042	Red-tailed Hawk	Tree	Empty	0	65	Fledged from eucalyptus

Given the results of this survey, BBI recommends that work on the proposed project occur either outside of the nesting season for Red-tailed Hawk (generally late January to early July), or – if this schedule is not feasible – that no work occur within 500 feet of an active Red-tailed Hawk nest. If work must occur within 500 feet of an active Red-tailed Hawk nest, then work should be completed in the presence of a biological monitor experienced with the behavior of Red-tailed Hawks.

During the course of this survey and BBI's other on-going sensitive species surveys, BBI biologists have been documenting all wildlife species observations. As of June 7, 2012, BBI biologists have detected 70 bird, 5 mammal, 2 reptile and 2 amphibian species in the survey area. The full list is of these species is provided in Attachment A.

If you have any questions or comments regarding this report please feel free to contact me at 213-304-1826.

Sincerely,

BLOOM BIOLOGICAL, INC.

Marcus C. England
Vice President

ATTACHMENT A. FAUNAL COMPENDIUM

This faunal compendium lists 70 bird, 5 mammal, 2 reptile and 2 amphibian species detected by BBI as of June 7, 2012 during raptor, riparian bird and California Gnatcatcher surveys.

Birds

Anseriformes - Screamers, Swans, Geese, and Ducks | Anatidae - Ducks, Geese, and Swans
- Mallard *Anas platyrhynchos*

Galliformes - Gallinaceous Birds | Odontophoridae - New World Quail
- California Quail *Callipepla californica*

Pelecaniformes - Pelicans, Herons, Ibises, and Allies | Ardeidae - Herons, Bitterns, and Allies
- Cattle Egret *Bubulcus i*bis

Accipitriformes - Hawks, Kites, Eagles, and Allies | Cathartidae - New World Vultures
- Turkey Vulture *Cathartes aura*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Accipitridae - Hawks, Kites, Eagles, and Allies
- White-tailed Kite *Elanus leucurus*
- Cooper's Hawk *Accipiter cooperii*
- Red-shouldered Hawk *Buteo lineatus*
- Red-tailed Hawk *Buteo jamaicensis*

Falconiformes - Caracaras and Falcons | Falconidae - Caracaras and Falcons
- American Kestrel *Falco sparverius*

Gruiformes - Rails, Cranes, and Allies | Rallidae - Rails, Gallinules, and Coots
- Virginia Rail *Rallus limicola*

Charadriiformes - Shorebirds, Gulls, Auks, and Allies | Charadriidae - Lapwings and Plovers
- Killdeer *Charadrius vociferus*

Columbiformes - Pigeons, and Doves | Columbidae - Pigeons and Doves
- Eurasian Collared-Dove *Streptopelia decaocto*
- Mourning Dove *Zenaida macroura*

Cuculiformes - Cuckoos and Allies | Cuculidae - Cuckoos, Roadrunners, and Anis
- Greater Roadrunner *Geococcyx californianus*

Apodiformes - Swifts, and Hummingbirds | Apodidae - Swifts
- White-throated Swift *Aeronautes saxatalis*

Apodiformes - Swifts, and Hummingbirds | Trochilidae - Hummingbirds
- Anna's Hummingbird *Calypte anna*
- Costa's Hummingbird *Calypte costae*
- Allen's Hummingbird *Selasphorus sasin*

Piciformes - Puffbirds, Jacamars, Toucans, Woodpeckers, and Allies | Picidae - Woodpeckers and Allies
- Nuttall's Woodpecker *Picoides nuttallii*

Passeriformes - Passerine Birds | Tyrannidae - Tyrant Flycatchers
- Black Phoebe *Sayornis nigricans*
- Say's Phoebe *Sayornis saya*
- Ash-throated Flycatcher *Myiarchus cinerascens*
- Cassin's Kingbird *Tyrannus vociferans*
- Western Kingbird *Tyrannus verticalis*

Passeriformes - Passerine Birds | Laniidae - Shrikes
- Loggerhead Shrike *Lanius ludovicianus*

Passeriformes - Passerine Birds | Vireonidae - Vireos
- Bell's Vireo *Vireo bellii*

Passeriformes - Passerine Birds | Corvidae - Crows and Jays
- Western Scrub-Jay *Aphelocoma californica*
- American Crow *Corvus brachyrhynchos*
- Common Raven *Corvus corax*

Passeriformes - Passerine Birds | Alaudidae - Larks
- Horned Lark *Eremophila alpestris*

Passeriformes - Passerine Birds | Hirundinidae - Swallows
- Northern Rough-winged Swallow *Stelgidopteryx serripennis*
- Cliff Swallow *Petrochelidon pyrrhonota*
- Barn Swallow *Hirundo rustica*

Passeriformes - Passerine Birds | Paridae - Chickadees and Titmice
- Oak Titmouse *Baeolophus inornatus*

Passeriformes - Passerine Birds | Aegithalidae - Long-tailed Tits and Bushtits
- Bushtit *Psaltriparus minimus*

Passeriformes - Passerine Birds | Troglodytidae - Wrens
- Canyon Wren *Catherpes mexicanus*
- Bewick's Wren *Thryomanes bewickii*
- House Wren *Troglodytes aedon*

Passeriformes - Passerine Birds | Polioptilidae - Gnatcatchers and Gnatwrens
- California Gnatcatcher *Polioptila californica*

Passeriformes - Passerine Birds | Sylviidae - Sylviid Warblers
- Wrentit *Chamaea fasciata*

Passeriformes - Passerine Birds | Mimidae - Mockingbirds and Thrashers
- Northern Mockingbird *Mimus polyglottos*
- California Thrasher *Toxostoma redivivum*

Passeriformes - Passerine Birds | Sturnidae - Starlings
- European Starling *Sturnus vulgaris*

Passeriformes - Passerine Birds | Bombycillidae - Waxwings

Cedar Waxwing *Bombycilla cedrorum*

Passeriformes - Passerine Birds | Ptilogonatidae - Silky-flycatchers
Phainopepla *Phainopepla nitens*

Passeriformes - Passerine Birds | Parulidae - Wood-Warblers
Common Yellowthroat *Geothlypis trichas*
Yellow Warbler *Setophaga petechia*
Wilson's Warbler *Cardellina pusilla*
Yellow-breasted Chat *Icteria virens*

Passeriformes - Passerine Birds | Emberizidae – Emberizids
Spotted Towhee *Pipilo maculatus*
Rufous-crowned Sparrow *Aimophila ruficeps*
California Towhee *Melozone crissalis*
Lark Sparrow *Chondestes grammacus*
Sage Sparrow *Amphispiza belli*
Song Sparrow *Melospiza melodia*

Passeriformes - Passerine Birds | Cardinalidae - Cardinals and Allies
Black-headed Grosbeak *Pheucticus melanocephalus*
Blue Grosbeak *Passerina caerulea*
Lazuli Bunting *Passerina amoena*

Passeriformes - Passerine Birds | Icteridae - Blackbirds
Red-winged Blackbird *Agelaius phoeniceus*
Western Meadowlark *Sturnella neglecta*
Brewer's Blackbird *Euphagus cyanocephalus*
Great-tailed Grackle *Quiscalus mexicanus*
Brown-headed Cowbird *Molothrus ater*
Hooded Oriole *Icterus cucullatus*
Bullock's Oriole *Icterus bullockii*

Passeriformes - Passerine Birds | Fringillidae - Fringilline and Cardueline Finches and Allies
House Finch *Carpodacus mexicanus*
Lesser Goldfinch *Spinus psaltria*
Lawrence's Goldfinch *Spinus lawrencei*
American Goldfinch *Spinus tristis*

Passeriformes - Passerine Birds | Passeridae - Old World Sparrows
House Sparrow *Passer domesticus*

Mammals

Lagomorpha | Leporidae
Brush Rabbit *Sylvilagus bachmani*
Desert Cottontail *Sylvilagus audubonii*
Black-tailed Jackrabbit *Lepus californicus*

Rodentia | Sciuridae
California Ground Squirrel *Spermophilus beecheyi*

Carnivora | Canidae
Coyote *Canis latrans*

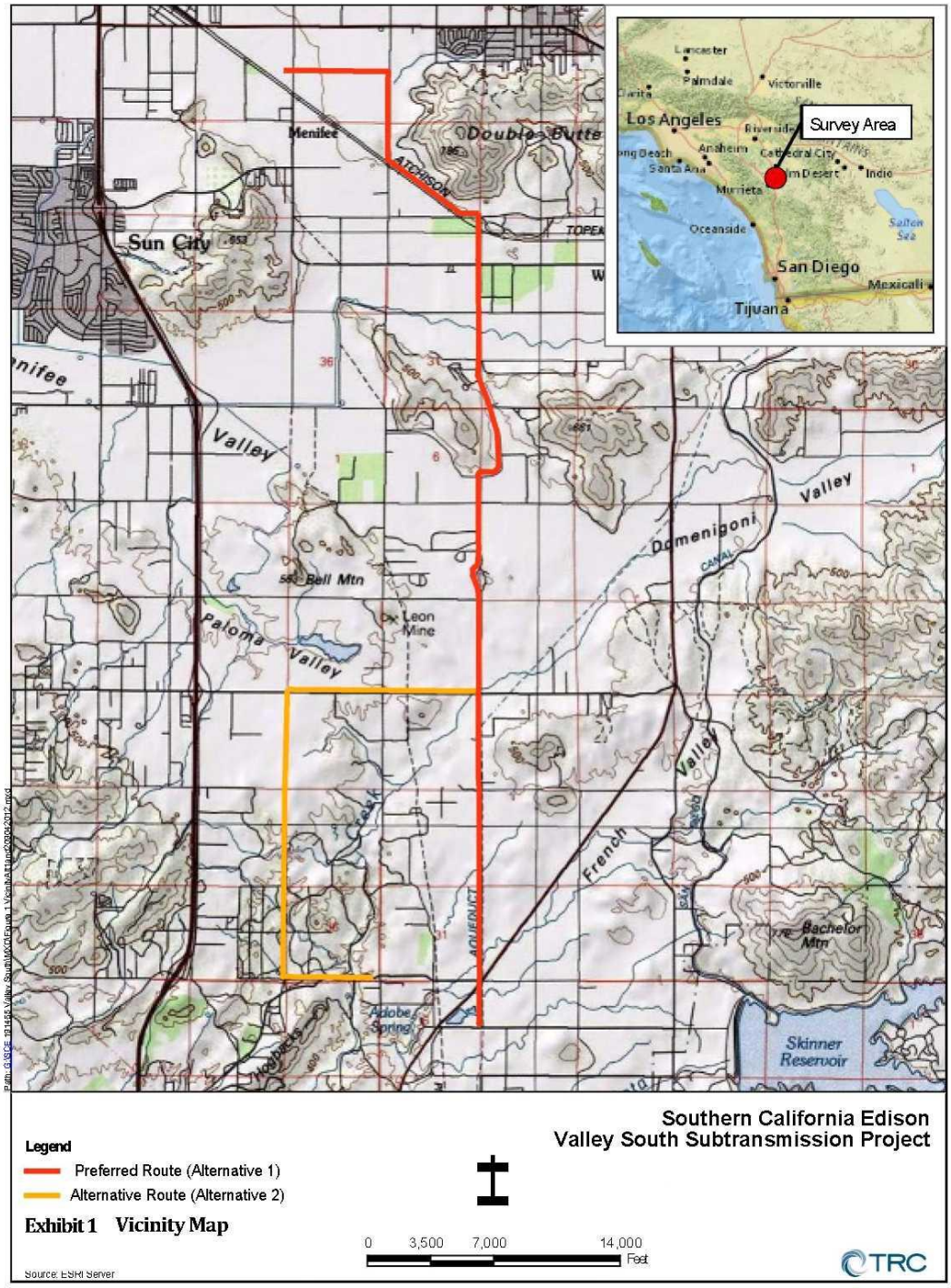
Reptiles

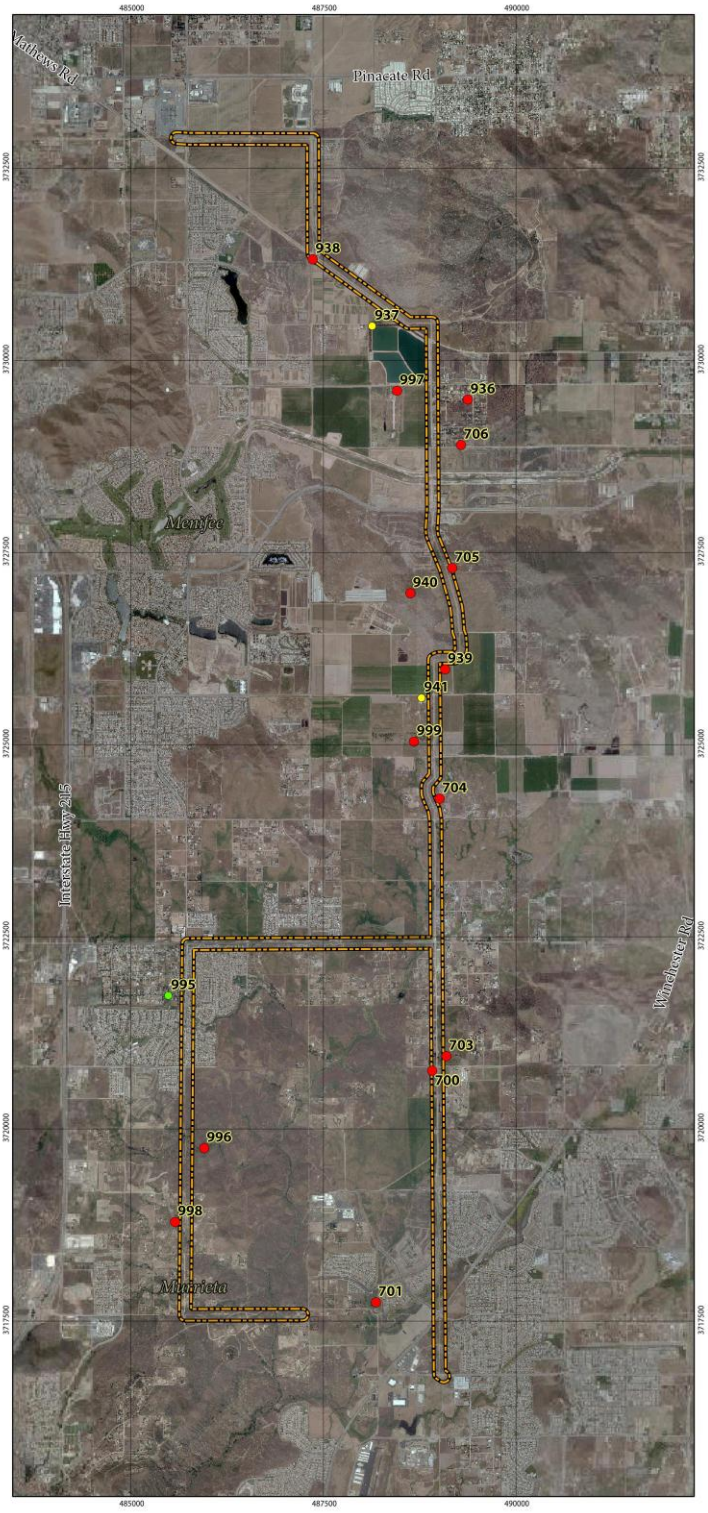
Squamata | Phrynosomatidae
Western Fence Lizard *Sceloporus occidentalis*
Granite Spiny Lizard *Sceloporus orcutti*

Amphibians

Anura | Hylidae
Pacific Chorus Frog *Pseudacris egilla*

Anura | Ranidae
Bullfrog *Rana catesbeiana*


Survey Area
Los Angeles
Lancaster
Palmdale
Victorville
Riverside
Anaheim
Santa Ana
Murrieta
Oceanside
San Diego
Tijuana
Mexicali
Indio
Sun City
Menifee
Double Butte
ATHISON
TOPEK
Valley
Bell Mtn
Leon Mine
Paloma Valley
Domenigoni
CANAL
AQUEDUCT
French
Bachelor Mtn
Adobe Spring
Skinner Reservoir
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
Exhibit 1 Vicinity Map
Southern California Edison
Valley South Subtransmission Project
0 3,500 7,000 14,000
Feet
Source: ESRI Server
TRC





Two Red-tailed Hawk fledglings from nest 998 (June 4, 2012).



Adult Red-tailed Hawk at nest 704 (June 4, 2012).



5.5 week-old Red-tailed Hawk chick on nest 939 (June 4, 2012).

Survey Area Approximation (250-foot Buffer)

Nest Locations

- American Crow
- Common Raven
- Red-tailed Hawk

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 10 July 2012
Aerial Photography: US Department of Agriculture

0 0.5 1 1.5 mi

1:50000

Exhibit 2: Raptor Nest Survey Results
Valley South Subtransmission Project | Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

Appendix E:
Focused Burrowing Owl Survey Report

Focused Burrowing Owl Survey Report

Southern California Edison

Valley South Subtransmission Project

Riverside, California

USGS Bachelor Mountain, Murrieta, Romoland, and Winchester Quadrangles

September 6, 2012

Prepared For:



Southern California Edison
1218 S. Fifth Ave
Monrovia, CA 91016

Prepared By:



TRC Solutions, Inc.
123 Technology Drive West
Irvine, CA 92618

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Acronyms List

Acronym	Definition
CDFG	California Department of Fish and Game
DBESP	Determination of Biologically Equivalent or Superior Preservation
EPD	County of Riverside Environmental Programs Division
F	Fahrenheit
GPS	Global Positioning System
GIS	Geographic Information System
MSHCP	Western Riverside Multiple Species Habitat Conservation Plan
kv	kilovolt
Proposed Project	Valley South Subtransmission Project
Project survey area	500-foot buffer around Preferred Route (Alternative 1) and Alternative 2
SCE	Southern California Edison
TRC	TRC Solutions, Inc.

1.0 INTRODUCTION

TRC Solutions, Inc. (TRC), on behalf of Southern California Edison (SCE), conducted a habitat assessment and protocol survey for burrowing owls (*Athene cunicularia*) for the Valley South Subtransmission Project (Proposed Project), which is located in and adjacent to the cities of Menifee and Murrieta and the unincorporated communities of Winchester and French Valley, Riverside County, California (see Figure 1, Vicinity Map). The purpose of this survey was to determine presence and assess risk to the species from the Proposed Project.

1.1 PROJECT OVERVIEW

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12kV Substation. The proposed Valley-Triton 115kV subtransmission line would be approximately 12 miles long.
- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system.
- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115kV line position and providing protection equipment as required.

The Preferred Route (Alternative 1) and Alternative 2 alignments are displayed in Figure 1, Vicinity Map. The Project survey area is defined by the 250-foot buffer surrounding Alternatives 1 and 2 (500-foot total width). A focused burrowing owl survey was conducted within the Project survey area.

1.2 REGULATORY BACKGROUND

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) requires a habitat assessment for all projects located within the burrowing owl survey overlay, as outlined in Section 6.3.2 of the MSHCP, in addition to focused burrowing owl surveys if suitable habitat exists on a site (MSHCP, 2003; Dudek and Associates, Inc., 2004). If burrowing owls are present on the project site, avoidance is required of 90 percent of those portions of the property that provide for long-term conservation value for the species, until the MSHCP has met the species-specific conservation objectives (MSHCP, Table 9-2). If 90-percent avoidance cannot be achieved, a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis must be prepared outlining the proposed impacts to burrowing owl and mitigation to compensate for the impacts. Regardless of whether owls are determined to be present based on survey, a pre-construction survey is also required within 30 days prior to commencing construction if suitable habitat is present on the site.

1.3 BURROWING OWL BIOLOGY

The western sub-species of the burrowing owl (*A. c. hypugaea*) occurs widely throughout the lowlands of central and coastal California. It is unique among North American owls in not requiring woody vegetation, rock formations, or man-made structures as part of its habitat. The burrowing owl has adapted to grassy plains and other open, treeless terrain, sheltering and nesting in the abandoned burrows of fossorial mammals. It does not excavate its own burrows, but can utilize a variety of underground shelters, even those created for other purposes by humans. In California, burrowing owls are typically associated with the colonial diggings of the Beechey ground squirrel (*Spermophilus beecheyi*). Chambers within rock outcroppings are also utilized by this species.

The burrowing owl is predominantly non-migratory in lowland California, establishing stable local populations where habitat conditions permit. Despite its wide distributional range, the overall population of this species has become fragmented as many local populations have disappeared with the historical spread of agriculture and more recent expansion of human urban and commercial development. Nevertheless, these owls are moderately tolerant of human activities and can shelter and nest on agricultural and urban margins if not directly disturbed.

Large expanses of flat to gently sloping terrain with generally low and/or sparse herbaceous vegetation cover are required by this species. At the local scale, habitat requirements also include sufficiently elevated and drained soil to avoid seasonal flooding of burrows. The availability of burrows depends on the activities of mammals such as ground squirrels, which typically utilize mounds, embankments, and berms, either natural or man-made. An additional [advantage] of the association with squirrels is the maintenance of sparse, low vegetation cover around burrows, which provides clear vantage to birds roosting on the ground surface. Due to the often localized distribution of suitable micro-topography, burrows are often spatially clustered, which often affects the dispersion of owls in open landscapes. Burrowing owl nests therefore often occur relatively close to one another, indicating a high level of social tolerance and limited territorial behavior.

Burrowing owls take a higher proportion of invertebrate prey than other owls of similar body size, although a variety of small vertebrates also constitute a part of this species' diet. Nesting occurs in a burrow between mid-spring and mid-summer. Burrowing owls can lay large clutches of eggs and fledge broods as large as six young under favorable conditions.

The burrowing owl is a federal Bird Species of Conservation Concern and designated as a Species of Special Concern by the California Department of Fish and Game (CDFG). It is a covered species under the MSHCP.

2.0 METHODS

Suitable habitat for burrowing owl within the survey area was determined by analyzing previous vegetation mapping, which included a detailed assessment of burrowing owl habitat features, such as vegetation cover and presence of rodent burrows. Detailed field notes were taken during each survey visit, including the date, locations surveyed, plant and animal species observed, and general habitat characteristics of each area examined. Relevant biological features were mapped

in the field with the aid of a hand-held Trimble sub-meter accuracy Global Positioning System (GPS) and/or plotted on aerial photographs. Vegetation communities were digitized and acreages calculated using Geographic Information System (GIS) software. Based on the distribution of habitat, burrows, and on logistic considerations, the Project survey areas was divided into five survey areas.

TRC conducted a survey following the MSHCP Burrowing Owl Survey Instructions dated March 29, 2006, with a slight modification to the timing of the survey visits based on the most recent CDFG burrowing owl survey methodology (CDFG, 2012). The MSHCP survey instructions are available on the County of Riverside Environmental Programs Division (EPD) website (EPD, 2006). Survey visits were conducted during the periods of highest detection probability: between morning civil twilight and 10:00 AM and 2 hours before sunset until evening civil twilight, pursuant to the current scientific understanding of burrowing owl biology, which is incorporated in the survey methodology (CDFG, 2012).

As outlined in the MSHCP survey instructions, the protocol consisted of the following two steps in Sections 2.1 and 2.2. Table 1 provides dates, times, conditions, and personnel for various steps of the survey effort.

2.1 STEP I – HABITAT ASSESSMENT

This step was conducted in conjunction with general vegetation mapping within the Project survey area in April of 2012. Vegetation map polygons were annotated with respect to presence of suitable burrowing owl habitat features, such as low, open vegetation cover, micro-topography, and general presence mammal burrows of suitable size, irrespective of basic vegetation type (e.g., grassland, coastal sage scrub). TRC either directly walked or scanned with binoculars (depending on Right of Entry) all areas within the 250-foot general survey buffer to verify and map potential habitat. Additionally, in accordance with the survey protocol, binoculars were used to scan all areas from 250 to 500 feet (150 meters) from the Project survey area for habitat, although these peripheral areas were not mapped.

2.2 STEP II – LOCATING BURROWS AND BURROWING OWL

Step II survey visits were conducted within the Project survey area during the burrowing owl breeding season: March 1st to August 31st. Visits occurred during weather conditions conducive to observing owls outside their burrows and detecting burrowing owl signs, avoiding rain, high winds (> 20 miles per hour), dense fog, or temperatures over 90° Fahrenheit (F).

2.2.1 Part A: Focused Burrow Survey

A focused burrow survey and mapping effort was conducted in areas of suitable habitat on the same days as the first owl surveys. The burrow survey involved documenting appropriately sized natural burrows (mammalian origin) or suitable man-made structures that could be utilized by burrowing owls. All suitable habitat within the Project survey area was systematically walked in a pattern sufficient to allow 100 percent visual coverage of the ground surface for detection of burrows and burrowing owl sign. Additionally, in accordance with the survey protocol, all areas from 250 to 500 feet (150 meters) from the project alignments were searched either by walking or by binoculars if Right of Entry was not available. All observations of

suitable natural or man-made burrows or dens, or sightings of burrowing owl were recorded using GPS and mapped in GIS. Surveys were conducted more than 5 days following rain events to allow accumulation of recent burrowing owl sign such as pellets and droppings.

2.2.2 Part B: Focused Burrowing Owl Surveys

Suitable habitat and burrows were present on the Project survey area. Therefore, a focused burrowing owl survey was conducted. Four separate survey visits were conducted during the highest detection probabilities, as described above. The first survey visits for some portions of the survey area coincided with the Step IIB burrow assessment stage. All areas of suitable habitat were initially scanned with binoculars, including previously mapped burrow locations and perches, to ascertain presence of owls above ground. A walking survey was then conducted in areas of suitable habitat to search more closely for concealed birds and signs of recent burrow use, such as pellets and scat. A 150-meter (approximately 500 feet) buffer zone around the Proposed Project alignment was also assessed either by walking or, lacking permission to access, by visually inspecting with binoculars. All potentially suitable burrow or structure entrances were investigated during each visual survey visit for signs of owl occupation, such as feathers, tracks, or pellets, and carefully observed to determine if burrows were occupied by owls. All burrows were investigated at short distances from their entrances, from minimally invasive vantage points. All observations of burrowing owl, occupied burrows, and burrows with owl sign were recorded using GPS and mapped in GIS.

Table 1: Survey Effort and Conditions

Date	Survey Areas	Surveyors*	Survey Hours	Weather conditions	Survey Step
4/24/12	4	TK, KS	07:45 to 09:45	55° F, clear to 20% cloud cover, wind 0 to 2 mph	IIA & IIB
5/08/12	3	TK	06:15 to 09:45	55° F, clear, wind 0 to 1 mph	IIA
5/08/12	5	TK	06:15 to 09:45	55° F, clear, wind 0 to 1 mph	IIA & IIB
5/09/12	1, 2	KS	07:00 to 10:00	57° F, clear, wind 0 to 2 mph	IIA
5/11/12	4, 5	TK, JL	05:45 to 09:00	55° F, overcast, wind 0 to 2 mph	IIB
5/24/12	1, 2, 3, 4	TK, KS	05:30 to 10:00	58°, overcast, wind 2 to 4 mph	IIB
6/04/12	2, 3, 5	TK, KS	05:30 to 10:00	59° F, overcast, wind 0 to 4 mph	IIB
6/05/12	1, 3	TK, KS	05:45 to 09:15	57° F, 80% cloud cover, wind 3 to 6 mph	IIB

Table 1 (cont.): Survey Effort and Conditions

Date	Survey Areas	Surveyors*	Survey Hours	Weather conditions	Survey Step
6/15/12	1, 2	TK, JL	06:00 to 10:30	57° to 74° F, overcast, wind 0 to 1 mph	IIB
6/27/12	4, 5	TK, JL	06:15 to 10:00	55° to 80° F, clear, wind 0 to 5 mph	IIB
6/28/12	1 ,2, 3	TK, KS	06:00 to 10:00	61° F, clear, wind 0 to 2 mph	IIB

**TK= Travis Kegel, KS= Karyn Sernka, JL= John Lovio*

3.0 EXISTING SITE CONDITIONS

3.1 TOPOGRAPHY, VEGETATION, AND LAND USES

The Proposed Project occurs within the predominantly rural and natural landscape comprising the interior valleys, rolling hills, and rugged peaks between the Santa Ana and San Jacinto Mountain ranges of western Riverside County. The Proposed Project primarily follows existing roadways that pass through relatively gradual terrain of the Perris, Domenigoni, Paloma, and French Valleys, as well as portions of the northeast Sedco Hills.

The southern portion of the Proposed Project survey area is drained by the Warm Springs Creek watershed and the northern portion by the Domenigoni Channel. Portions of the valleys have no drainage outlets to the ocean.

The Proposed Project location on the east side of coastal mountains, in combination with relatively low elevation range of 1,300 to 2,600 feet above sea level, imposes arid conditions that are reflected in the vegetation. Xeric scrub vegetation dominates the steeper terrain, whereas the valley bottoms support mostly herbaceous types, such as grassland. Much of the steep terrain is extremely rocky, with many large granitic outcrops. Drainages and basins support willow-dominated riparian growth and/or marsh.

Human land uses in this area have historically consisted primarily of extensive agricultural conversion of the valley bottoms to dry grain and irrigated crops, as well as livestock grazing. Human dwellings are sparse and widely separated, but typically associated with non-native tree and shrub plantings. Although relatively steep terrain within the Proposed Project survey area supports a high percentage of native scrub vegetation, much of it shows evidence of past disturbance, such as through grazing or fire. The topography and/or vegetation of nearly every drainage bear some evidence of past disturbance from crop cultivation, vegetation removal, channelization, or grazing. Much of the current riparian vegetation appears to be re-established growth following earlier disturbance. Vegetation on several drainages adjacent to recent suburban development have been actively enhanced or restored.

Human-caused modifications to the landscape include artificial water reservoirs and large tracts of non-native trees.

Dense suburban and commercial development with associated landscaping and water control features constitute the most recent addition to the landscape of the Proposed Project survey area. Dense development accounts for 27 percent of the area mapped within the Project and Alternative survey areas. This human habitat occurs in discrete areas within the matrix of rural or undeveloped lands.

3.2 VEGETATION

Geographically, the Proposed Project survey area is within the Southwestern California region of the California Floristic Province, and more specifically, in the South Coast subregion. The South Coast subregion extends along the Pacific Coast from Point Conception to Mexico. Twenty-two vegetation types, sub-types, and other land cover types were documented and mapped within the Project survey area. These are identified in Table 2: Vegetation Types within 250 Feet of Alternatives 1 and 2 and their distributions are depicted in Figure 2: Vegetation Communities Map (Sheets 1 through 8). Vegetation is classified and mapped according to the system of Holland (1986), as modified by Oberbauer et al. (2008). Detailed vegetation descriptions of the types that constitute burrowing owl habitat are provided below.

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Table 2: Vegetation Types within 250 Feet of Alternatives 1 and 2

Acres	Description	Standard Classification[1]
4.55	Willow-cottonwood riparian	Southern Cottonwood - Willow Riparian Forest (61330)
2.24	Willow riparian	Central Coast Arroyo Willow Riparian Forest (61230)
0.41	Restored riparian forest (mixed)	Southern Cottonwood - Willow Riparian Forest (61330)
0.83	Semi-native willow riparian scrub	Southern Willow Scrub (63320)
4.17	Mulefat riparian scrub	Mulefat Scrub (63310)
9.08	Dense, tall coastal sage scrub	Diegan Coastal Sage Scrub: Inland Form (32520)[2]
60.29	Mature open coastal sage scrub	Coastal Sage Scrub (32500 / 32700)
3.81	Chamise chaparral	Chamise Chaparral (37200)
4.53	Tall, dense coastal sage scrub-chaparral	Coastal Sage - Chaparral Scrub (37GOO)
0.73	Burned coastal sage scrub-chaparral	Coastal Sage - Chaparral Scrub (37GOO)
14.80	Low, sparse coastal sage scrub	Coastal Sage Scrub (32500 / 32700)
257.35	Ruderal	Disturbed Habitat (11300)[2]
92.40	Dense non-native grassland	Non-native Grassland (42200)
4.93	Semi-native grassland	Non-native Grassland (42200)
260.35	Unvegetated / developed	Urban / Developed (12000)[2]
30.17	Ornamental / planted veg	Urban / Developed (12000)[2]
22.05	Eucalyptus	Eucalyptus Woodland (79100)[2]
3.84	Freshwater marsh	Valley Freshwater Marsh (52410)
1.33	Disturbed ephemeral wet basin	San Diego Mesa Claypan Vernal Pool (44322)[2]
277.84	Agriculture	Agriculture (18000)[2]
4.12	Disturbed flood control channel	Disturbed Wetland (11200)[2]
3.77	Open water	Fresh water (64140)[2]
1063.6 TOTAL ACREAGE		

[1] *Framework classification according to Holland 1986.*
[2] *Vegetation types not addressed in Holland 1986, so classified according to Oberbauer et al. 2008.*

Detailed vegetation descriptions below are limited to those types that provide habitat for burrowing owls. A comprehensive description of all vegetation types within the Project survey area will be provided in the forthcoming Proponent's Environmental Assessment.

3.2.1 Upland Herbaceous Vegetation

Non-woody, seasonally dry upland vegetation accounts for approximately 60 percent of the mapped Project survey area. Dry herbaceous types occur mostly on level or gently sloping terrain, although they provide significant cover within open shrub vegetation on gradual to steep slopes as well. This general vegetation structural form consists of several defined types that vary in their degree of native composition and direct human origin.

3.2.1.1 Ruderal (Holland-Oberbauer Code 11300)

Ruderal is defined as consisting predominantly of non-native, short-lived annual plants adapted to colonizing disturbed areas. Ruderal areas typically have been disturbed to the degree where they no longer bear any resemblance to the original vegetation occurring in these places. Some native "weed" species and few small, fast-growing woody species may occur as part of this association. Ruderal vegetation establishes naturally on areas that have been disturbed by human-related activities such as tilling, grazing/trampling, scraping, or earth-moving. It occupies waste areas, often on roadsides with heavily compacted soils with little available oxygen. Ruderal areas are typically maintained in a disturbed condition on an infrequent basis, therefore allowing the establishment and proliferation of rank vegetation cover.

Approximately 257 acres of ruderal vegetation is distributed widely throughout the Project survey area, occurring on field edges, road margins, untended agricultural fields, and other areas previously mechanically disturbed, such as abandoned, graded construction pads. Typical species vary depending on the location and level of disturbance, but are often dominated by herbaceous annuals and grasses. Species can include black mustard (*Brassica nigra*), radish (*Raphanus sativus*), wild oat (*Avena* spp.), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), Australian saltbush (*Atriplex semibaccata*), tocalote (*Centaurea melitensis*), fennel, telegraph weed (*Heterotheca grandiflora*), crown daisy (*Chrysanthemum coronarium*), castor bean (*Ricinus communis*), pineapple-weed (*Chamomilla suaveloens*), common knotweed (*Polygonum arenastrum*), sowthistle (*Sonchus oleraceus*), horseweed, common fiddleneck (*Amsinckia menziesii*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), bristly ox-tongue (*Lactuca serriola*), and goosefoot (*Chenopodium* spp.). Ornamental species may also colonize and proliferate in ruderal communities (Holland and Keil, 1995).

3.2.1.2 Grasslands (Holland-Oberbauer code 42200)

Grassland likely originally occupied much of the valley bottoms and gradual slopes in the inter-mountain lowlands of western Riverside County. This vegetation included many non-grass forbs as well. Invasion of non-native herbaceous weedy species has been widespread, largely in response to ground disturbance, but areas only moderately disturbed and retaining relatively natural soil conditions often support a significant component of native grass and forb species.

Approximately 5 acres of semi-native grassland occurs east of the north – south section of Alternative Alignment 2, which parallels Menifee Road, southward from Keller Road. The grass component consists largely of non-native species and is dominated by wild oat (*Avena fatua*), with lesser amounts of various bromes (*Bromus mollis*, *B. tectorum*, and *B. rubens*). Despite the predominance of non-native grasses, grass density is variable, with fairly discrete areas of sparse grass supporting a relatively high proportion of native and non-native forbs. Native species include gold fields (*Lasthenia californica*), dot-seed plantain (*Plantago erecta*), and graceful tarplant (*Holocarpha virgata*).

Approximately 92 acres of non-native grassland occurs widely throughout the Project survey area on valley bottoms and gradual slopes. It often intergrades with and resembles dry grain agriculture and in places may represent fallow agricultural fields. It is also widespread in the openings within sparse, formerly disturbed coastal sage scrub, although it was not mapped separately as a component of scrub vegetation. Grassland is typically dominated by a mixture of non-native species such as wild oat (*Avena fatua*) and various bromes (*Bromus mollis*, *B. tectorum*, and *B. rubens*).

The distinction between ruderal and non-native grassland vegetation is based on a somewhat arbitrary threshold of proportion of grasses versus non-grass species. These types apparently share a common origin in disturbance combined with invasion by non-natives. Non-native grassland may be more typically associated with livestock grazing and ruderal may correspond more with former soil disturbance. The proportions of grass and forb vary, but predominance of dense grasses with a small proportion of forbs and few sparse or open areas defines non-native grassland. This vegetation is self-perpetuating.

3.2.1.3 Agriculture

The predominant form of agriculture in the inter-mountain lowland area of western Riverside County is dry grain cultivation, particularly wheat. Actively tended agriculture accounts for approximately 278 acres (26 percent) of the Project survey area. Agriculture is confined to valley bottoms and low-gradient slopes and is characterized by monocultures of crops requiring cultivation (ground disturbance) and subject to regular, mechanical harvest. As such, these types are not self-perpetuating, actually representing a form of human development, and thus provide little habitat value for native plants and animals. However, the presence of vegetation cover, seasonal food source, and lack of human structures and roads provides some resources, including dispersal corridors, for adaptable animal species. Some disturbance-adapted, but geographically restricted (i.e., special status) native plant species also occur in agricultural margins.

3.2.2 Native Shrublands

Associations of shrub-forming species are the dominant vegetation form throughout much of arid, lowland southern California. This woody or semi-woody form reflects adaptation to seasonal drought conditions and irregular disturbance through wildfire. Shrublands typically dominate on dry, often steep slopes of relatively poor, well-drained soils. Density and species composition vary with location and conditions, but most shrublands include an herbaceous component that ranges from sparse understory to extensive, floristically diverse associations in the shrub interstices.

3.2.2.1 Coastal Sage Scrub, various forms (Holland-Oberbauer codes 32500, 32520, 32700, and 37GOO)

Coastal sage scrub is an association of relatively low-stature, woody or semi-woody shrubs and subshrubs averaging less than two meters in height. This vegetation occurs on lower elevation, more exposed, and highly drained slopes, therefore typically existing under the harshest conditions in the landscape. Component species have adapted to seasonal drought through a variety of means such as drought-deciduousness, reduced leaf surfaces and/or hard leaf cuticles that resist water loss, and large root masses. Many species contain aromatic compounds in their tissues to discourage herbivory. This vegetation is adapted to fire by such means as resistant basal tissues (i.e., crown-sprouting) and persistent seed bank.

Dominant shrub species of coastal sage scrub vary depending on local site factors (e.g., slope aspect, soil) and levels of disturbance. Approximately 90 acres of sage scrub is distributed widely throughout the Project survey area survey buffer. The majority of the Project survey area supports relatively uniform coastal sage scrub dominated by flat-top buckwheat (*Eriogonum fasciculatum*). California sagebrush (*Artemisia californica*) occurs in varying proportions, but is rarely equal to buckwheat in dominance. Brittle bush (*Encelia farinosa*), which is an indicator of desert transition conditions, is very infrequent within the Project survey area , suggesting coastal affinities of the vegetation. Cacti such as cholla (*Cylindropuntia californica*) and prickly pear (*Opuntia littoralis*) occur in small proportion. This sage scrub vegetation is variably open, ranging from approximately 30% to 80% shrub cover and the average height is about one meter. Stands of different density categories were mapped separately (Table 2) as they provide habitat values for different special-status animal species. Openings in the vegetation support mostly non-native grassland and weedy forbs. The general structure and composition of this vegetation suggests former disturbance from grazing or fire. The relatively open stands on gradual terrain provide potential nesting and foraging habitat for burrowing owls. Habitat value in coastal sage scrub may be enhanced by the presence of rock outcrops.

4.0 RESULTS AND DISCUSSION

A total of 70 hours of survey time was dedicated to the Step II burrowing owl survey. Survey areas are depicted on Figure 3, Burrowing Owl Survey Areas.

The survey areas included the Project survey area and a buffer zone. The buffer zone included all suitable habitat within 150 meters of the Project survey area. Focused surveys for the burrowing owl were limited to areas of suitable habitat within the Project survey area and buffer zone, as described below.

4.1 HABITAT

Suitable burrowing owl habitat was determined to be widespread throughout the Project survey area, accounting for approximately 60 percent of the total area. Many portions of the Project survey area provide habitat value for burrowing owls, ranging from optimal sparse grassland with mounded or bermed micro-topography and rodent burrows for nesting to dense herbaceous cover and open sage scrub vegetation for occasional foraging. Vegetation types in Table 2 and

Figure 2 considered suitable for burrowing owls include non-native grasslands, ruderal, Diegan coastal sage scrub, and agriculture, as discussed in Section 3.2.

Burrow locations are shown in Figure 4 (Sheets 1 through 8), Burrow Location Map. Mapped locations represent either single burrows or complexes of burrows most likely created by activities of California ground squirrels (*Spermophilus beecheyi*) and possibly of American badgers (*Taxidea taxus*). Burrows from smaller mammals (e.g. kangaroo rats [*Dipodomys* spp.]) were considered too small for owls to occupy and were not mapped Burrows were most often found in relatively sparse grassland, low ruderal vegetation, and agricultural margins that are relatively undisturbed and sufficiently elevated and drained to support sustained underground habitation without seasonal flooding. Burrows are often concentrated along rural fence lines and in isolated, relatively undisturbed granitic rock outcrops within pasturelands and croplands. Such areas provide refuge for owls by being avoided by farm machinery and cattle.

4.2 BUROWING OWL LOCATIONS

Burrowing owls were detected in three locations within the Project survey area or corresponding buffer area (refer to Figure 4). Two of these locations were consistently occupied by breeding pairs throughout the season. Additionally, owl sign in the form of molted feathers provided limited additional information on the extent of nocturnal forays by these birds (refer to Figure 4).

4.2.1 Location 1

Location 1, the northern-most set of burrowing owl observations, was just beyond the Project survey area, in ruderal vegetation. Specifically, this location occurred within Survey Area 1, north of an abandoned chicken farm and northeast of Matthews Road, near the southwestern foot of the Double Butte promontory (refer to Figure 4, Sheet 1). Adjacent habitat consists of ruderal and disturbed areas. The observation consisted of a lone male burrowing owl. Detections of this individual were made at this location for 3 of the 4 focused surveys.

4.2.2 Location 2

Location 2 represents a pair of breeding burrowing owls with two juveniles within Survey Area 2. This pair nested in a boulder outcrop approximately 250 feet southeast of the intersection of Leon and Garbani Roads (refer to Figure 4, Sheet 5). Adjacent habitat consists of ruderal and agricultural lands. The breeding pair was found at this location consistently during the diurnal surveys, but it was not until late June before two juvenile burrowing owls were found, indicating that the pair had reproduced in 2012.

Another burrowing owl sighting was incidentally made northwest of this breeding pair on July 3, 2012. It is assumed that this sighting was of one of the juvenile owls dispersing into adjacent habitat.

4.2.3 Location 3

Location 3 represents a pair of breeding burrowing owls that fledged six juveniles within Survey Area 2 in 2012. This pair nested in an earthen mound within a fenced rural yard approximately 80 feet southeast of the intersection of Leon and Loretta Roads (refer to Figure 4, Sheet 6).

Adjacent habitat consists of ruderal and agricultural vegetation. This pair successfully fledged young despite its proximity to rural residential development.

4.2.4 Additional Sign

Diurnal burrowing owl surveys are inherently limited by the lack of information from the birds' nocturnal foraging periods, even though this species is relatively more diurnal than many other owl species. Some evidence of foraging range of owls is provided by incidental detections of molted feathers, as shown in Figure 4, Sheets 3 and 5.

Home ranges for burrowing owls in optimal habitat in California have been estimated at 30 or more acres (Johnsgard, 1988). Considering the large spatial requirements of the species and the abundance of surrounding suitable habitat in and surrounding the Proposed Project survey area, it is reasonable to assume that all or nearly all suitable vegetation may be considered occupied, at least along the Leon Road corridor between Scott and Olive Roads. The apparent clustering of nesting birds in this area is consistent with documented colonial behavior by the species (Johnsgard, 1988).

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Project survey area and surroundings support extensive suitable burrowing owl habitat, as defined above. A small, relatively clustered group of two nest sites within the survey buffer probably represents a local segment of a larger regional population of this species in western Riverside County.

5.1 RECOMMENDED MINIMIZATION MEASURES

Due to the currently undetermined transmission line impact foot print of the Proposed Project, specific impacts to burrowing owls and their habitat cannot yet be assessed. In lieu of a detailed impacts analysis, specific minimization measures designed to avoid adverse effects to owls, burrows, and habitat are recommended below:

- Disturbance to occupied burrows should be avoided during the nesting season (February 1 through August 31) unless a qualified biologist verifies through noninvasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- Establishment of a buffer zone of 75 meters (250 feet) around any active nest is recommended. All construction activities would be prohibited within the buffer zone during the period of active nesting and fidelity to the nest site by young of the year. Buffer zones should be appropriately flagged and monitored by a qualified biologist.
- When destruction of an occupied burrow is unavoidable, it should not occur during the breeding season. Post-breeding monitoring should be conducted to determine the state of continued use by owls. In the event of continued, non-breeding use, enhancement (enlargement and/or clearing of debris) of existing, nearby, unoccupied burrows or creation of artificial burrows or alternate nest structures is recommended at a ratio of 2:1 on the protected lands site. Selection of alternate burrow sites must include an

assessment of likely suitability based on absence of ground squirrels and predatory species, such as badgers and rattlesnakes.

- If burrowing owls must be moved away from the disturbance area, passive relocation techniques are recommended rather than actual avian trapping. Several weeks may be required to allow owls to acclimate to alternate burrows.

5.2 PRE-CONSTRUCTION SURVEY

All projects supporting burrows or suitable habitat, irrespective of the presence of burrowing owls, require a pre-construction survey that must be conducted within 30 days prior to ground disturbance, pursuant to the MSHCP. The Project survey area supports suitable habitat and burrows and will therefore be subject to the 30-day pre-construction survey requirement.

6.0 CERTIFICATION

We hereby certify that the statements furnished above and in the attached figures and appendices present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of our knowledge and belief.

Travis Kegel	John Lovio
Biologist	Senior Biologist

7.0 REFERENCES

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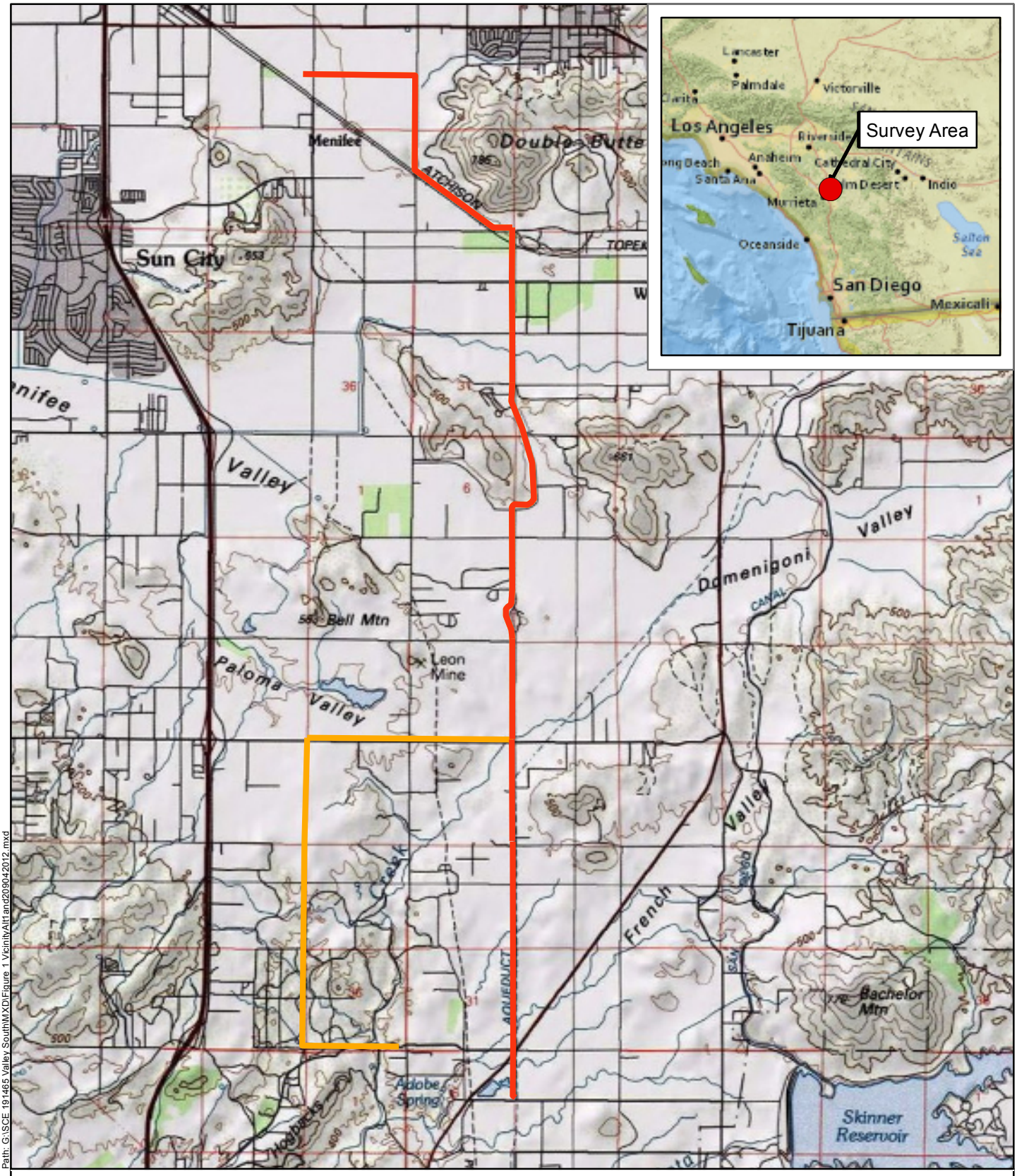
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FIGURES



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Legend

- Preferred Route (Alternative 1)
- Alternative Route (Alternative 2)

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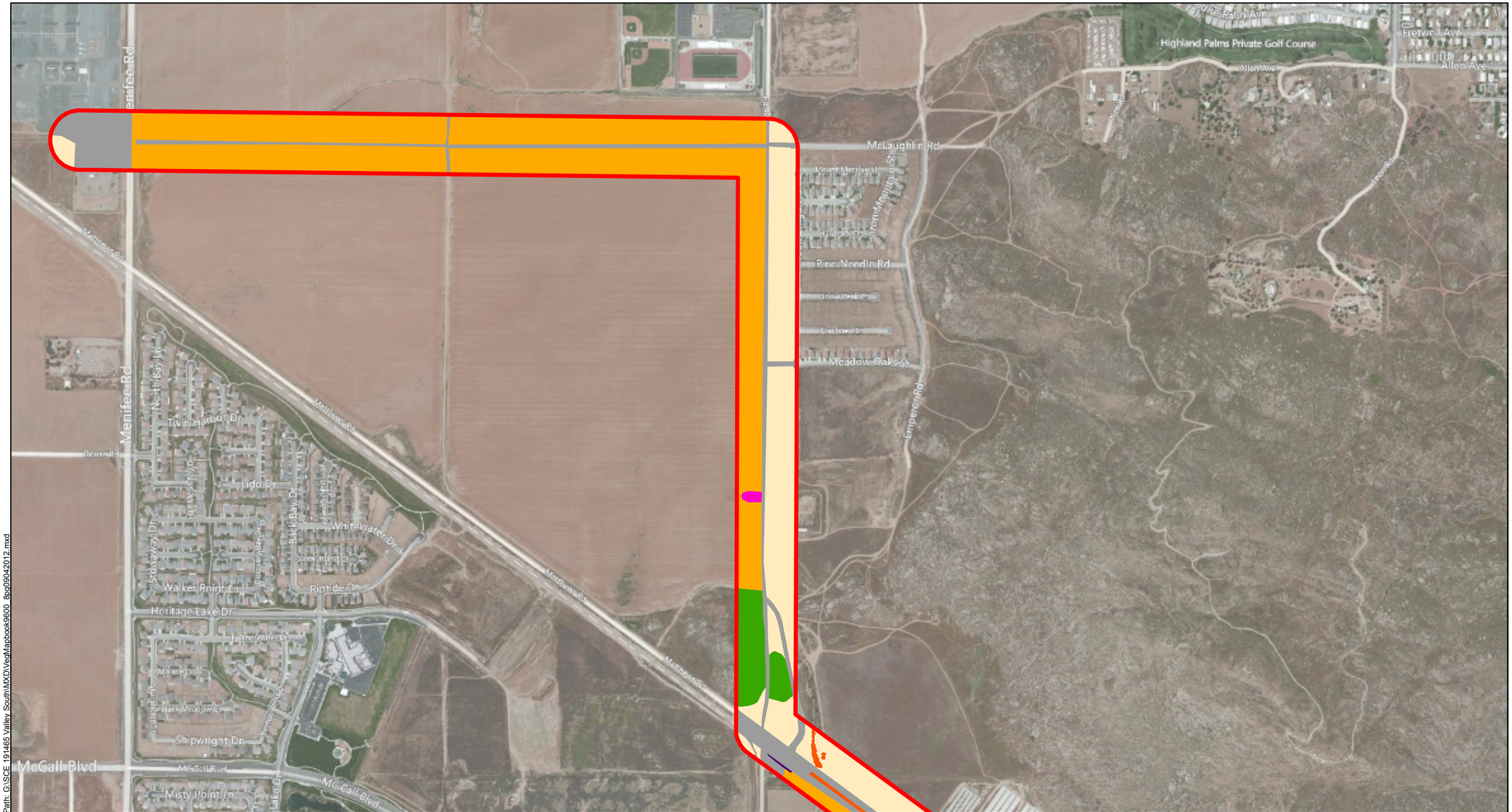
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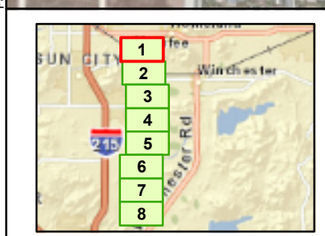
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Valley South Subtransmission Project

Vicinity Map

Figure 1

TRC





Legend

- 500 ft Survey Corridor
- Agriculture (18000)
- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub: Inland Form (32520)
- Disturbed / Developed (12000)
- San Diego Mesa Claypan Vernal Pool (44322)
- Disturbed Wetland (11200)
- Eucalyptus (11100)
- Mulefat Scrub (63310)
- Non-native Grassland (42200)
- Open Water (64140)
- Ornamental Vegetation (12000)
- Ruderal (11300)
- Southern Cottonwood - Willow Riparian Forest (61330)
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- Valley Freshwater Marsh (52410)
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Valley South Subtransmission Project

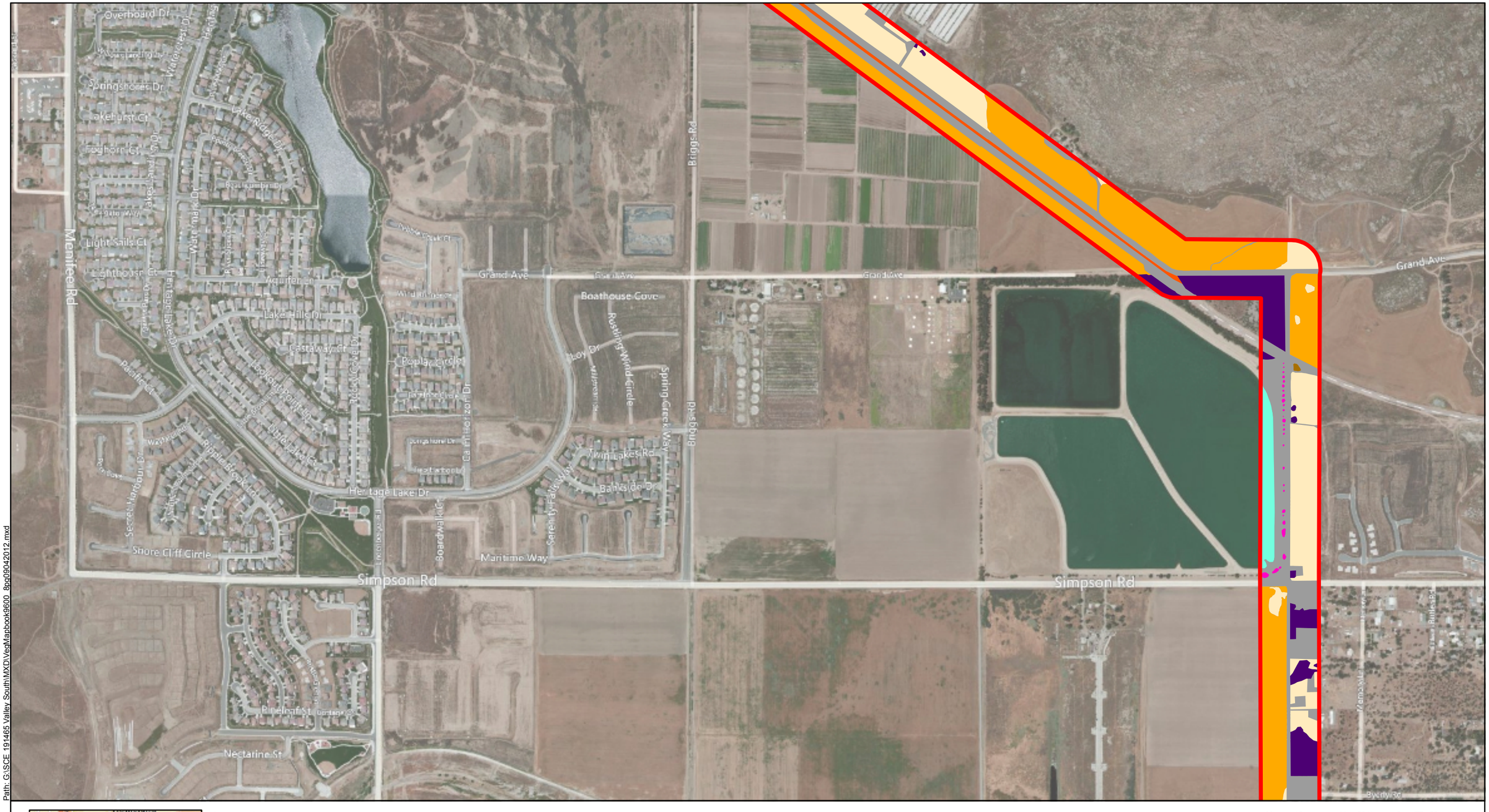
Vegetation Communities Map
Sheet 1 of 8

Figure 2

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Legend

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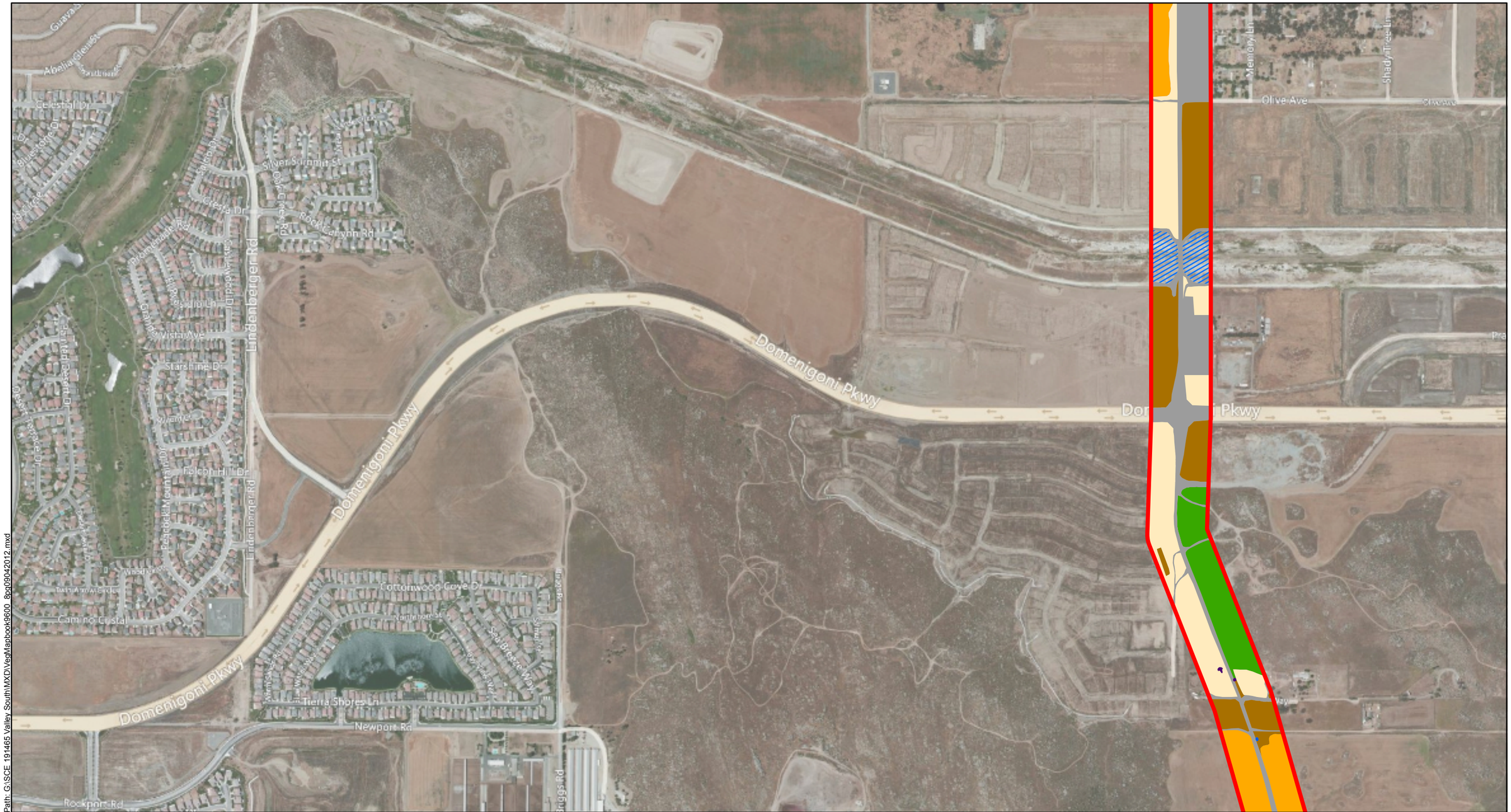
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Valley South Subtransmission Project

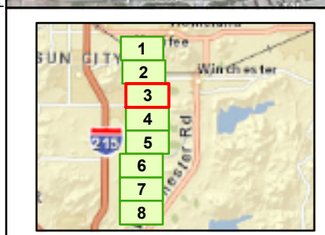
Vegetation Communities Map

Sheet 2 of 8

Figure 2

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Legend

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Valley South Subtransmission Project

Vegetation Communities Map
Sheet 3 of 8

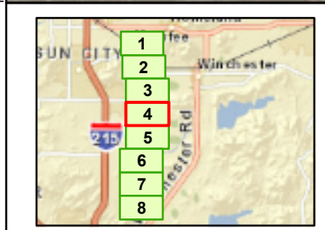
Figure 2

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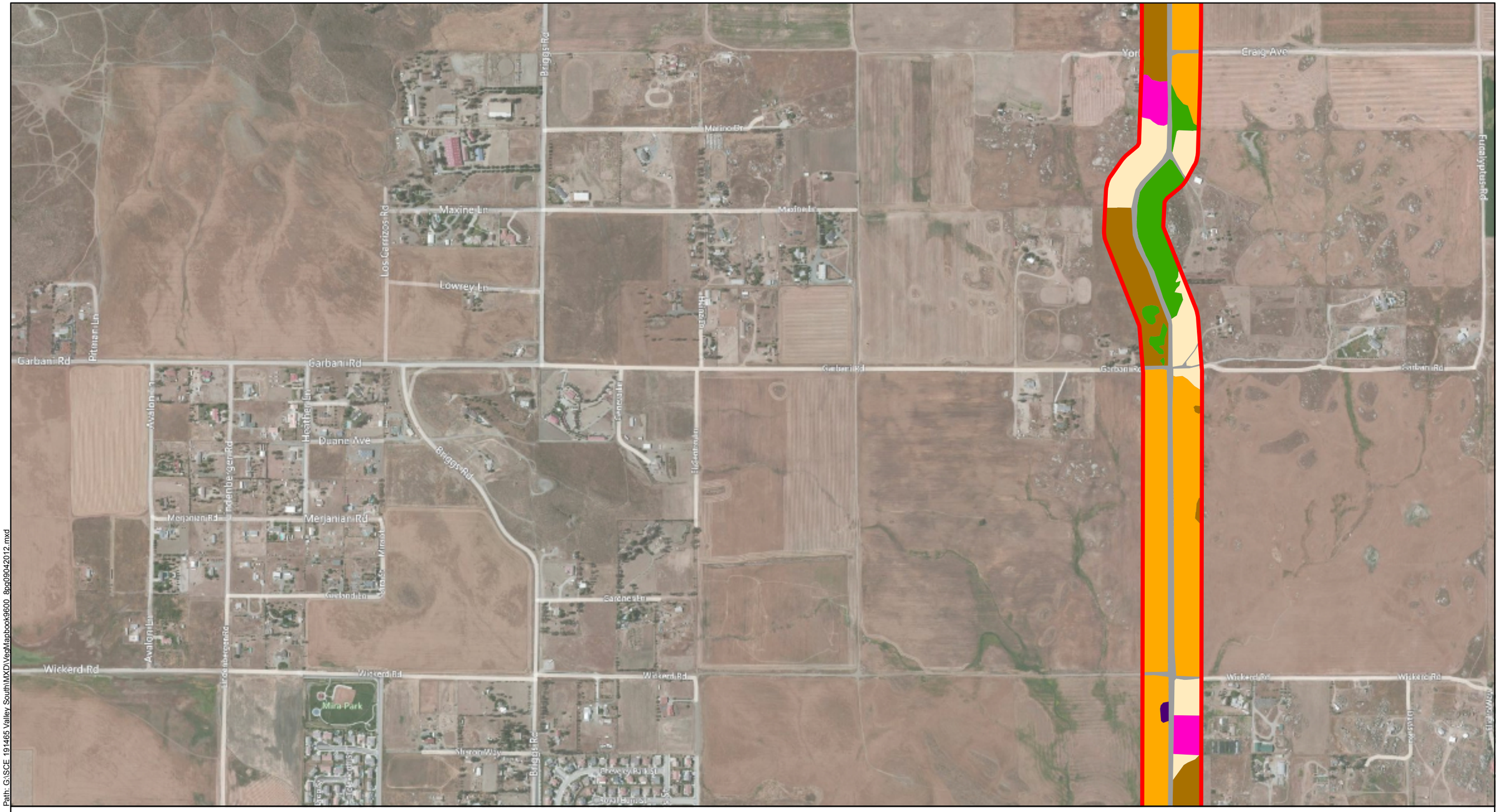
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Valley South Subtransmission Project

Vegetation Communities Map
Sheet 4 of 8

Figure 2

TRC





Legend

- 500 ft Survey Corridor
- Agriculture (18000)
- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub: Inland Form (32520)
- Disturbed / Developed (12000)
- San Diego Mesa Claypan Vernal Pool (44322)
- Disturbed Wetland (11200)
- Eucalyptus (11100)
- Mulefat Scrub (63310)
- Non-native Grassland (42200)
- Open Water (64140)
- Ornamental Vegetation (12000)
- Ruderal (11300)
- Southern Cottonwood - Willow Riparian Forest (61330)
- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

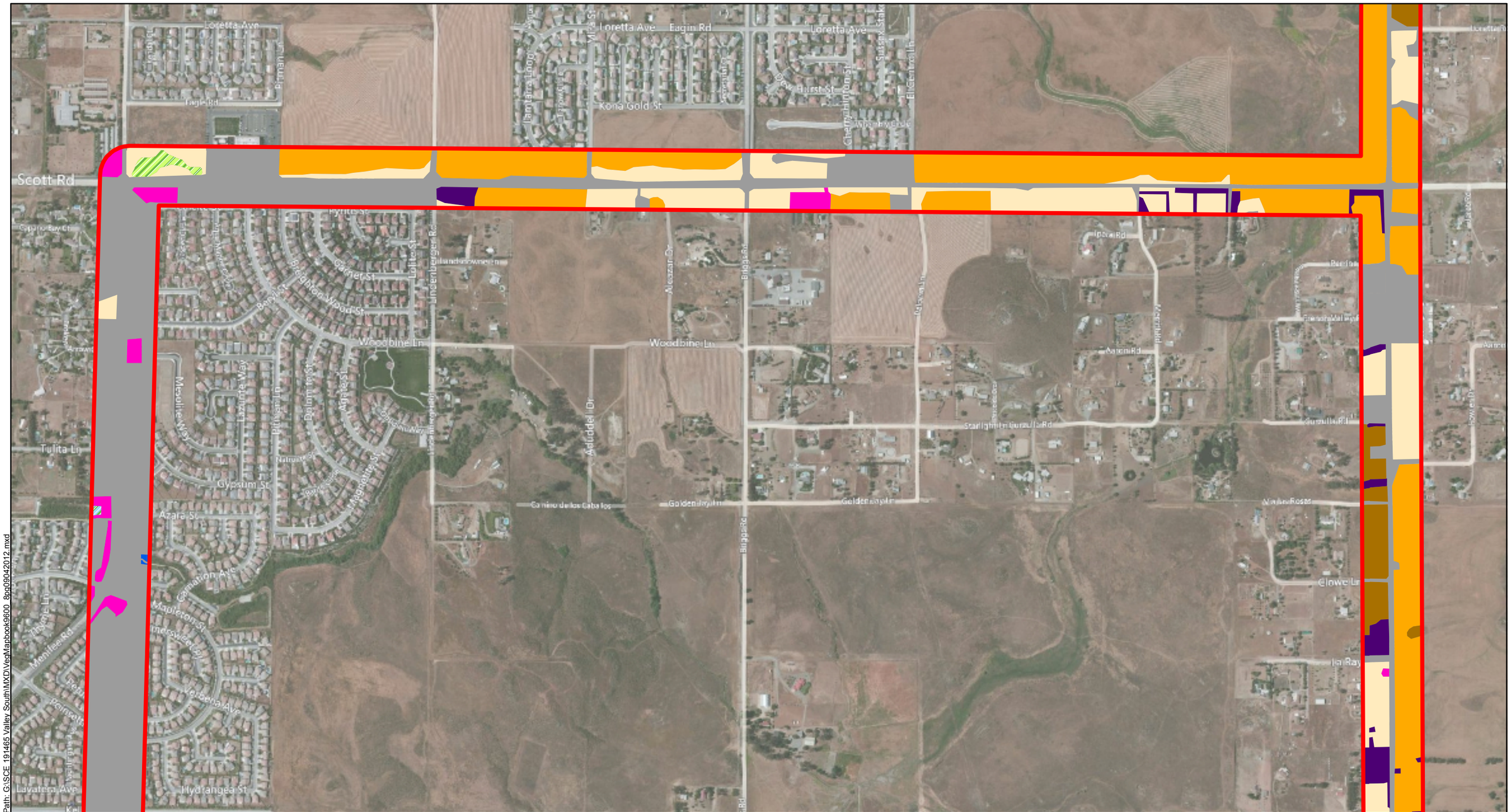
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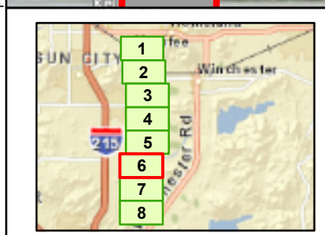
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Figure 2

TRC

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Legend

- 500 ft Survey Corridor
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- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub: Inland Form (32520)
- Disturbed / Developed (12000)
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- Disturbed Wetland (11200)
- Eucalyptus (11100)
- Mulefat Scrub (63310)
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- Ruderal (11300)
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- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

N

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Southern California Edison
Valley South Subtransmission Project

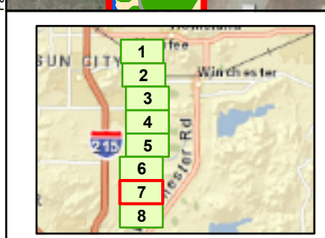
Vegetation Communities Map
Sheet 6 of 8

Figure 2

TRC

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Legend

- 500 ft Survey Corridor
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- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
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- Ruderal (11300)
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- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

N

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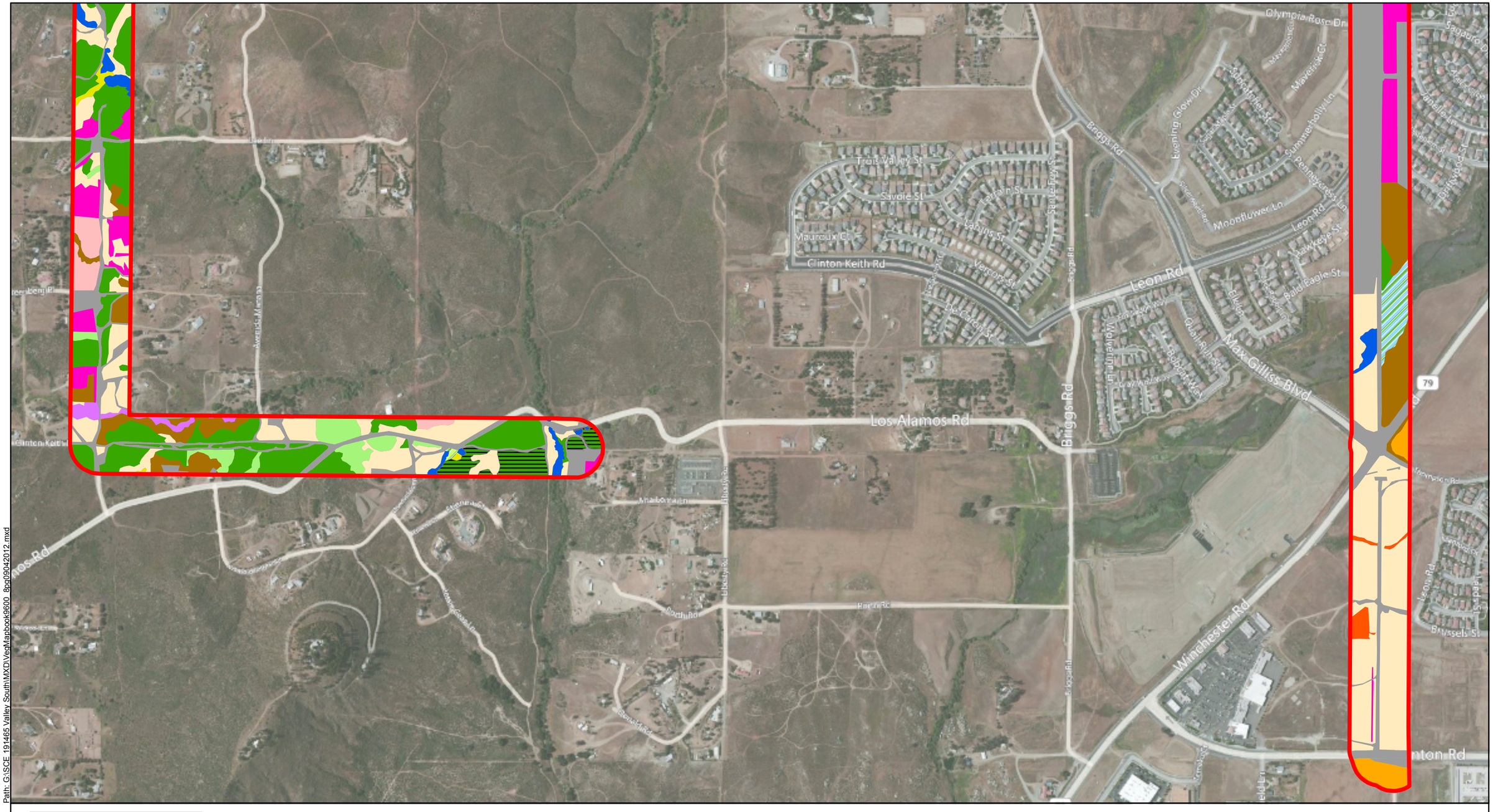
Southern California Edison
Valley South Subtransmission Project

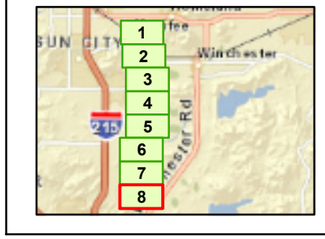
Vegetation Communities Map

Sheet 7 of 8

Figure 2

TRC





Legend

- 500 ft Survey Corridor
- Agriculture (18000)
- Central Coast Arroyo Willow Riparian Forest (61230)
- Chamise Chaparral (37200)
- Coastal Sage - Chaparral Scrub (37GOO)
- Diegan Coastal Sage Scrub (32500)
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- Ornamental Vegetation (12000)
- Ruderal (11300)
- Southern Cottonwood - Willow Riparian Forest (61330)
- Southern Willow Scrub (63320)
- Valley Freshwater Marsh (52410)
- Unknown

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

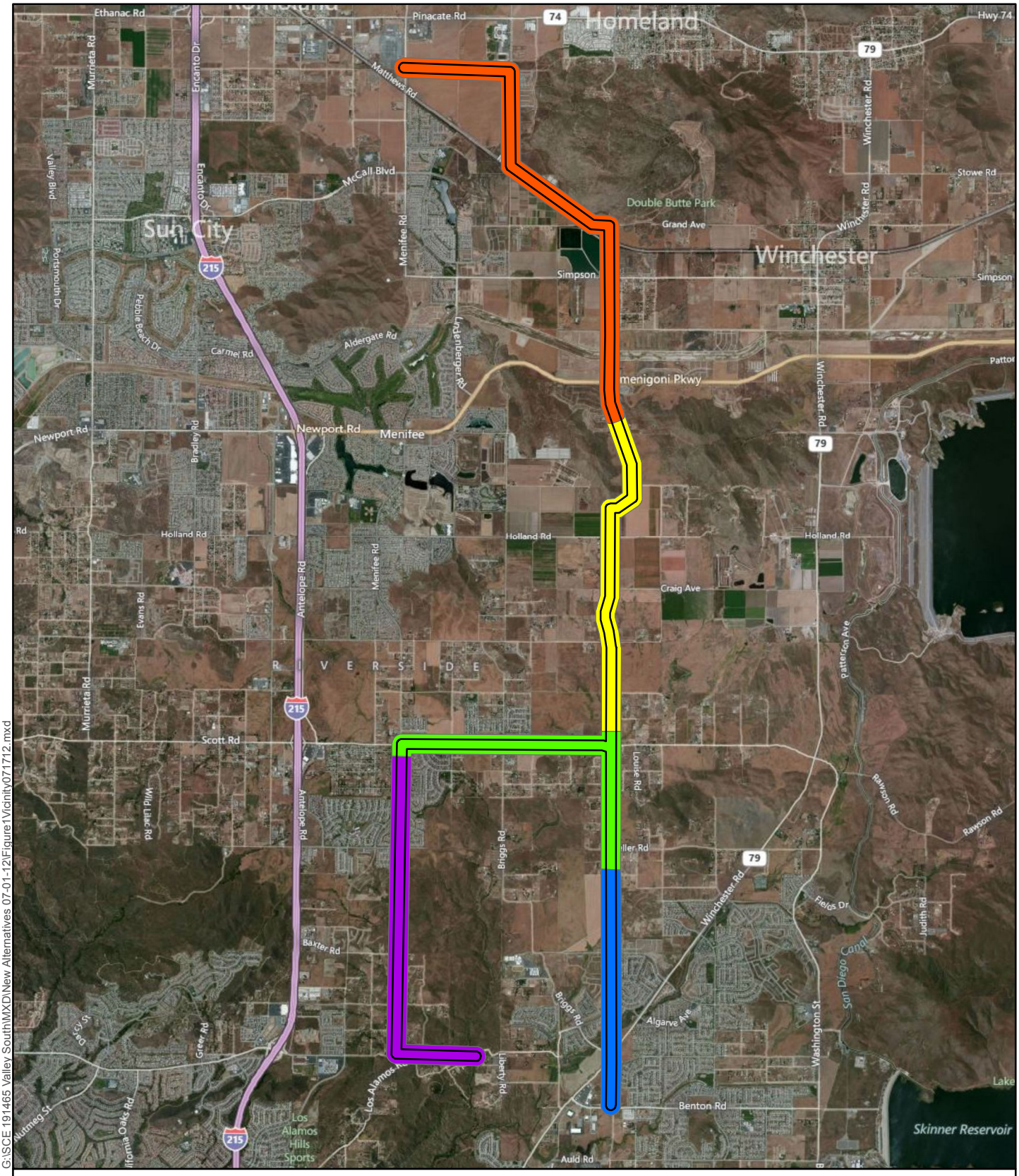
Vegetation Communities Map

Sheet 8 of 8

Figure 2

TRC

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Legend

- Project survey area

Focused Burrowing Owl Survey Areas

- Survey Area 1
- Survey Area 2
- Survey Area 3
- Survey Area 4
- Survey Area 5

N

0 3,500 7,000 Feet

Source: ESRI Server

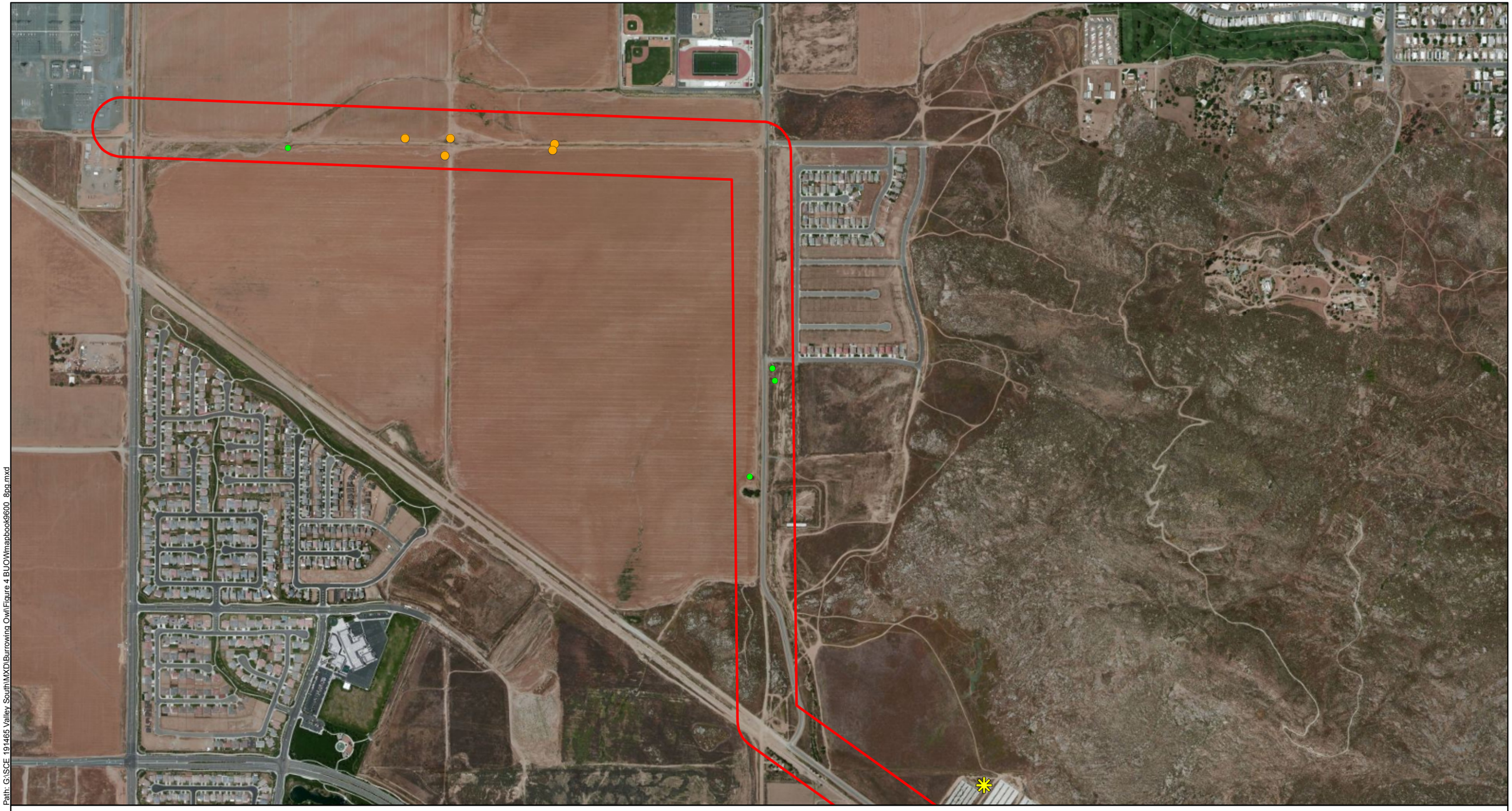
Southern California Edison
Valley South Subtransmission Project

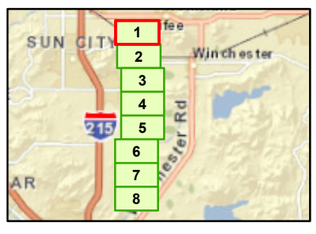
Burrowing Owl Survey Areas

Figure 3

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

Burrow Location Map

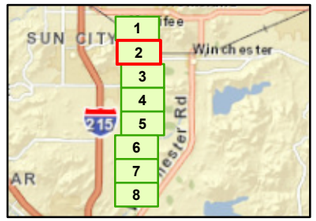
Sheet 1 of 8

Figure 4

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

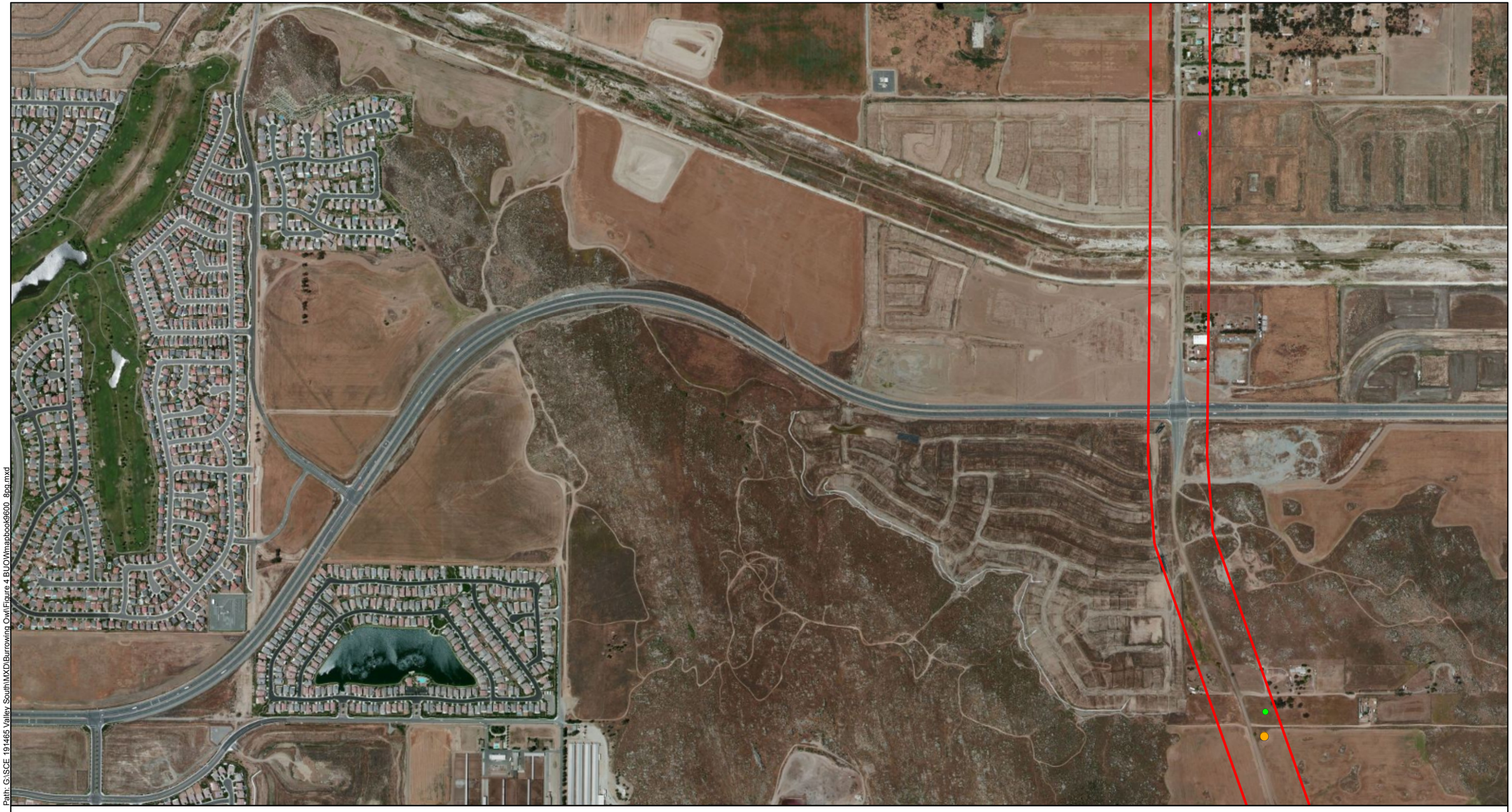
Burrow Location Map

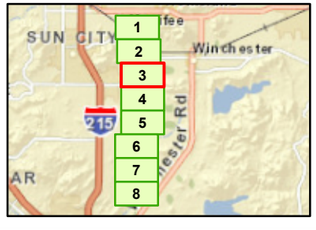
Sheet 2 of 8

Figure 4

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

Burrow Location Map

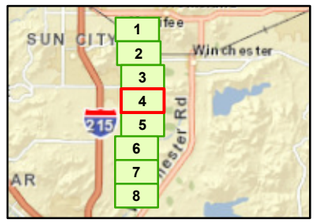
Sheet 3 of 8

Figure 4

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600
Feet

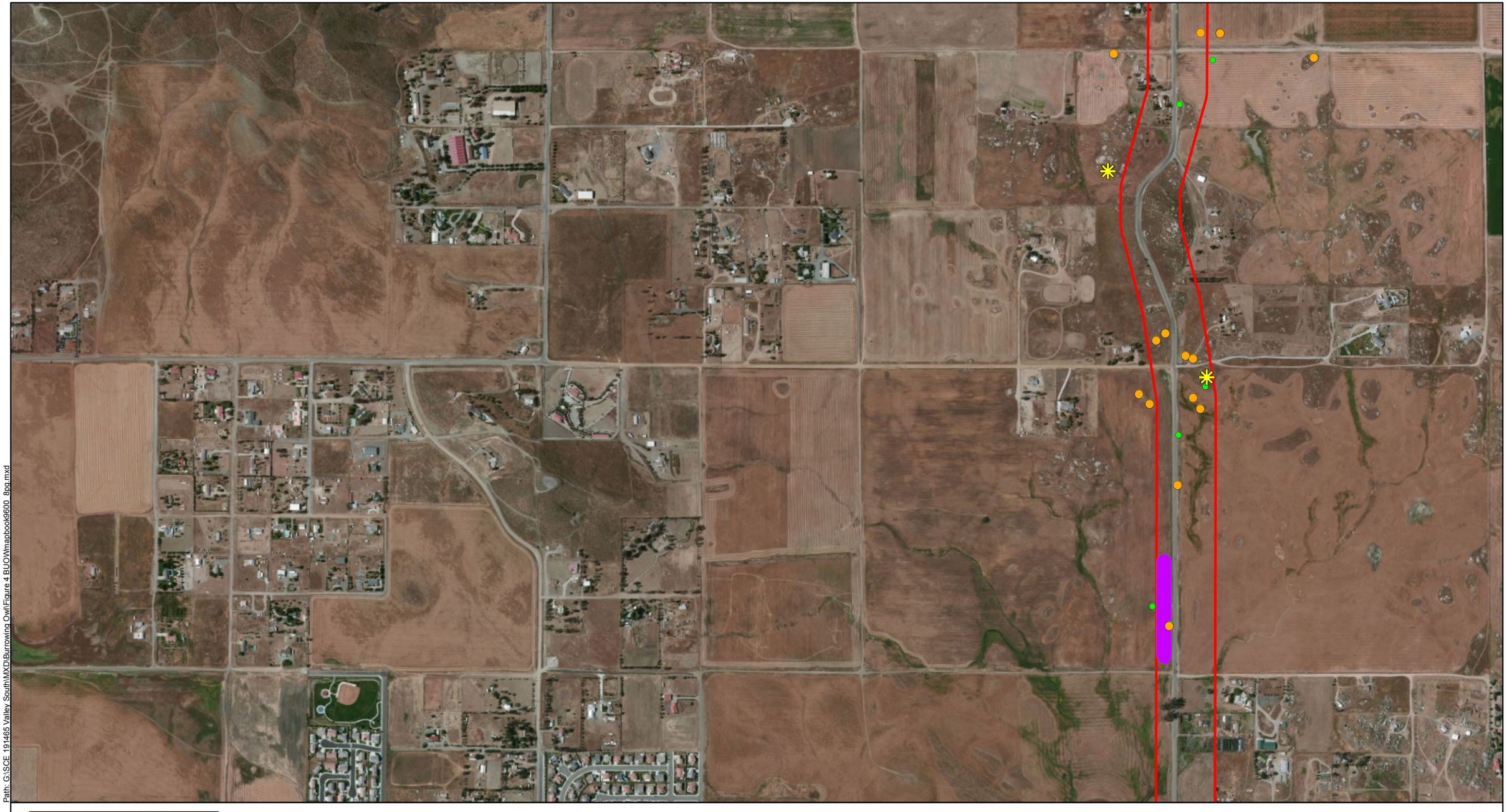
Southern California Edison
Valley South Subtransmission Project

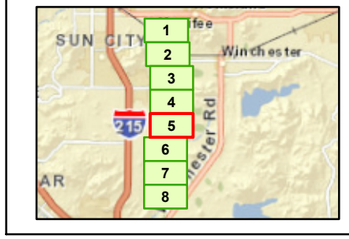
Burrow Location Map
Sheet 4 of 8

Figure 4

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

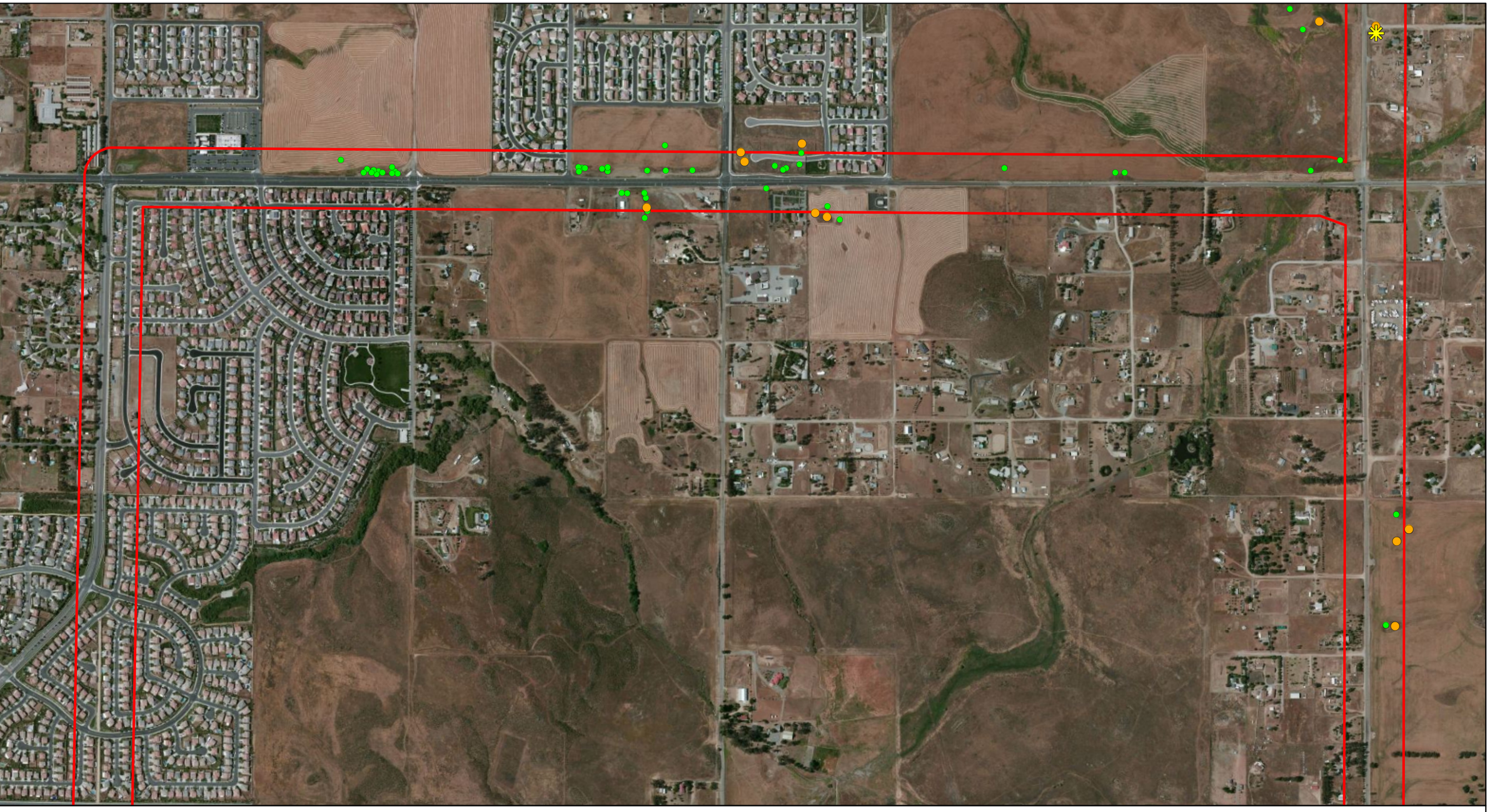
Burrow Location Map

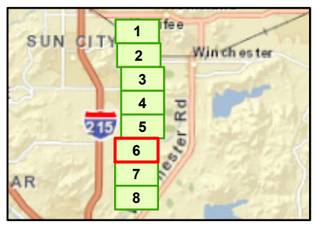
Sheet 5 of 8

Figure 4

TRC

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

Burrow Location Map

Sheet 6 of 8

Figure 4

TRC





Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600 Feet

Southern California Edison
Valley South Subtransmission Project

Burrow Location Map

Sheet 7 of 8

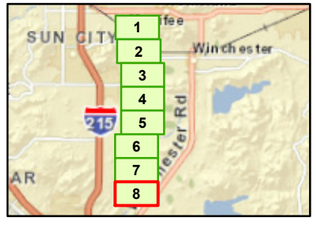
Figure 4

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Legend

- Project survey area
- Burrowing Owls
- Burrow
- Burrow Complex
- Burrowing Owl Feather Area

N

0 400 800 1,600
Feet

Southern California Edison
Valley South Subtransmission Project

Burrow Location Map

Sheet 8 of 8

Figure 4

TRC

Appendix F:
Results of Least Bell's Vireo and Southwestern Willow Flycatcher Presence/Absence Surveys on Southern California Edison's Proposed Valley South Subtransmission Project Located in Western Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

August 27, 2012

Ms. Elisha Back
Principal
TRC Solutions, Inc.
4393 Viewridge Ave., Suite A
San Diego, California 92123

[via email]

Subject: Results of Least Bell's Vireo and Southwestern Willow Flycatcher presence/absence surveys on Southern California Edison's proposed Valley South Subtransmission Line Project located in western Riverside County, California

Dear Ms. Back:

Bloom Biological, Inc. (BBI) was retained by TRC Solutions, Inc. (TRC) to survey for Least Bell's Vireos (*Vireo bellii pusillus*) and Southwestern Willow Flycatchers (*Empidonax traillii extimus*) along the originally designated Preferred (Alternative 1) and Alternative (Alternative 2) routes of Southern California Edison's (SCE) proposed Valley South Subtransmission Line Project (VSSP) located in western Riverside County, California. A Least Bell's Vireo was found on two dates in one location along the Preferred Route, and a likely migrant Southwestern Willow Flycatcher or other subspecies was found on one date along the Alternative Route. This letter report documents methods and provides details on the results of BBI's survey.

PROJECT DESCRIPTION

SCE is proposing the construction of the VSSP (Proposed Project) to serve current and projected demand for electricity, and maintain electric system reliability in portions of Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12 kV Substation. The proposed Valley-Triton 115 kV subtransmission line would be approximately 12 miles long.

- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system

Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

SURVEY AREA DESCRIPTION

A variety of biological resource surveys are being conducted along VSSP Preferred Route and Alternative Route. In general, the surveys are to be conducted within a 200 to 500-foot corridor depending on if the areas are developed or undeveloped along the routes. For the purposes of standardized map-making, a

250-foot buffer is shown on the attached exhibit (Exhibit 1) and this is referred to herein as the "survey area".

The survey area comprises approximately 1,065 acres (431 hectares) located within and in the vicinity of the cities of Murietta and Menifee, Riverside County, California. On the Public Land Survey System, the survey area is located in all or portions of Sections 1 and 2 of Township 07S, Range 03W; Sections 5, 6 of Township 07S, Range 02W; Sections 13, 14, 23, 24, 25, 26, 35, and 36 of Township 06S, Range 03W; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31 of Township 06S, Range 02W; Sections 13, 14, and 24 of Township 05S, Range 03W; and Sections 18, 19, 30, 31, and 32 of Township 05S, Range 02W of the US Geological Survey's 7.5-minute *Bachelor Mountain, Murrieta, Romoland* and *Winchester* quadrangles (Exhibit 1). Elevations in the survey area range from 1,300 feet above mean sea level (amsl) in the south to 1,530 feet amsl in the north. The nearest major road to the survey area is Winchester Road (State Highway 79).

The proposed project occurs within a predominantly rural landscape with low-density human habitation, extensive agriculture, localized dense suburban development, and areas of undeveloped native vegetation. Southern cottonwood-willow forest, southern willow riparian woodland, and southern riparian scrub (sensu Holland 1986) occurs in five discrete patches along both alignments south of Keller Road in Murrieta. The total area of these habitats within 250 feet of the alignments is approximately 7.5 acres.

The Proposed Project occurs within the area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which was approved in 2003 as a large-scale, multi-jurisdictional, multiple-species planning mechanism pursuant to the Natural Communities Conservation Planning (NCCP) Act of 1991. The MSHCP also satisfies the requirements of a Habitat Conservation Plan (HCP) for federally listed species under the Endangered Species Act. The MSHCP, which conserves species and habitats as well as accounts for human development, defines "coverage" of species under the planning process as the anticipated adequate, long-term conservation of those species under full implementation of the plan.

NATURAL HISTORY

Least Bell's Vireo

The Least Bell's Vireo is "formerly a common and widespread summer resident below about 600 m (2000 ft) in western Sierra Nevada, throughout Sacramento and San Joaquin valleys, and in the coastal valleys and foothills from Santa Clara Co. south. Also was common in coastal southern California from Santa Barbara Co. south, below about 1200 m (4000 ft) east of the Sierra Nevada, in Owens and Benton valleys, along Mojave River and other streams at western edge of southeastern deserts, and along entire length of Colorado River (Grinnell and Miller 1944). Has declined drastically or vanished entirely throughout California range in recent decades, apparently from cowbird parasitism and habitat destruction and degradation (Goldwasser et al. 1980). Two races occur in California. *V. b. pusillus* (endemic to California and northern Baja California) is now a rare, local, summer resident below about 600 m (2000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey cos.; in coastal southern California from Santa Barbara Co. south; and along the western edge of the deserts in desert riparian habitat. In 1977-78, 67 males or paired individuals were counted at 23 of 65 sites surveyed on the coastal slope of southern California, and 23 at 9 of 18 sites on the desert slope (Goldwasser et al. 1980, Garrett and Dunn 1981). *V. b. arizonae* now is a rare summer resident along the Colorado River from Needles, San Bernardino Co., south to Blythe, Riverside Co. Bell's vireo (race

uncertain) also breeds in at least 2 sites along Amargosa River near Tecopa, Inyo Co. (Gaines 1977b, Garrett and Dunn 1981)."[1]

Least Bell's Vireo was listed as Endangered under the Federal Endangered Species Act on May 2, 1986 (Service 1986) with Critical Habitat designated on February 2, 1994 (Service 1994).

Southwestern Willow Flycatcher

The Willow Flycatcher is "a rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 600-2500 m (2000-8000 ft) in the Sierra Nevada and Cascade Range. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena 1982). Has been observed breeding along the Santa Ynez river in Santa Barbara Co., and along the Santa Clara river in Ventura Co. (J. Greaves pers. comm). May still nest elsewhere in lowland California, as in San Diego Co., but definite records are lacking. Common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast (Grinnell and Miller 1944, Gaines 1977a, 1977b, Remsen 1978, McCaskie et al. 1979, Garrett and Dunn 1981)."[1]

The Southwestern Willow Flycatcher is one of four subspecies currently recognized (Service 2011). The historical breeding range of this subspecies includes southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. The flycatcher's current range is similar to the historical range, but the quantity of suitable habitat within that range is reduced (Service 2011) from historic levels due to habitat loss and modification (Service 1995). The species is also a frequent target of brood parasitism by the Brown-headed Cowbird (*Molothrus ater*).

The Southwestern Willow Flycatcher was listed as Endangered under the Federal Endangered Species Act on February 27, 1995 (Service 1995). Critical habitat was designated on July 22, 1997 (Service 1997). A revision to critical habitat was proposed on August 15, 2011 and has not been finalized (Service 2011).

METHODS

The standard U.S. Fish and Wildlife Service (Service 2001) breeding-season protocols for Least Bell's Vireo (Service 2001) and Southwestern Willow Flycatcher (Sogge et al. 2010) were followed. Potential vireo habitat within the survey area was surveyed eight times by BBI Senior Biologist H. Lee Jones (Permit No. TE 829204-5) during the breeding season (April 10 to July 31) with at least ten days between survey visits. The surveys were conducted during the morning hours prior to 1100 hours (h) and when the temperature exceeded 50° Fahrenheit (F) (10° Celsius [C]). Jones listened for Least Bell's Vireo songs, whisper songs, calls, and scolds, and looked for adult and juvenile Least Bell's Vireos in all potential suitable breeding habitat.

Five Southwestern Willow Flycatcher protocol surveys were conducted by Jones (Table 1). All potential Willow Flycatcher habitat was surveyed once during Period 1 (May 15 to May 31), two times during Period 2 (June 1 to June 24), and twice during Period 3 (June 25 to July 17). Surveys were conducted at least 5 days apart and were conducted during morning hours (prior to 1030h) and when the temperature exceeded 50° F (10° C). If a singing Willow Flycatcher was not heard after several minutes, Jones played pre-recorded vocalizations of Southwestern Willow Flycatcher for approximately 30 seconds and listened

[1] California Department of Fish and Game. 2010. CWHR version 8.1 personal computer program. California Interagency Wildlife Task Force. Sacramento, California.

for a response. The one time a Willow Flycatcher was detected, tape playing immediately ceased according to protocol guidelines.

All but the last survey on July 23 were conducted over two-day periods in which surveys for California Gnatcatchers were also being conducted. This was necessary because three of the four small patches of willow riparian habitat along the corridor either occurred in canyons that bisected coastal sage scrub or in areas immediately adjacent to coastal sage scrub.

Weather conditions and time of day were appropriate for maximizing the likelihood of Least Bell's Vireo and Southwestern Willow Flycatcher detection and are presented in Table 1.

Table 1. Field survey dates, times and weather conditions.

Date	Time	Weather	Biologist
05/08/12	0600-1000h	53.5-85° F; clear; calm	Lee Jones
05/09/12	0600-0910h	54-76° F; clear; calm	Lee Jones
05/18/12	0600-1100h	57-74° F; cloudy to clear; calm to wind W 1-5 mph	Lee Jones
05/19/12	0555-0745h	52-60° F; clear; calm	Lee Jones
06/01/12	0530-1005h	50.5-84° F; clear; calm	Lee Jones
06/02/12	0540-0830h	56-61.5° F; ground fog to 90% low overcast; calm	Lee Jones
06/11/12	0520-1010h	55-74° F; clear; calm	Lee Jones
06/12/12	0535-0755h	49.5-66.5° F; clear with light fog early; calm	Lee Jones
06/22/12	0530-0930h	59-65° F; ground fog to clear; calm	Lee Jones
06/23/12	0540-0835h	59-61° F; ground fog to clear; calm	Lee Jones
07/02/12	0535-0925h	56-70° F; ground fog to clear; calm to wind SE 2-4 mph	Lee Jones
07/03/12	0530-0755h	57.5-60.5° F; ground fog; calm	Lee Jones
07/12/12	0555-0910h	67-84.5° F; 50-100% cloud cover; calm to wind SE 4-6 mph	Lee Jones
07/13/12	0550-0820h	71-75° F; 90% cloud cover; calm	Lee Jones
07/23/12	0545-0735	64.5-70° F; 10-0% cloud cover; calm	Lee Jones

RESULTS AND DISCUSSION

A singing male Least Bell's Vireo was detected in a small patch of willows (*Salix* spp.) and tamarisk (*Tamarix* sp.) just north of the intersection of Max Gilliss Blvd. and Winchester Rd. (Exhibit 2) on the second survey (May 18) and fourth survey (June 12). It was not detected on the first, third, or fifth through eighth surveys and is believed to have been an unmated male that occupied this site only for a few weeks before moving on.

A single Willow Flycatcher (subspecies unknown) called briefly in the willows along Warm Springs Creek adjacent to Los Alamos Road in response to a pre-recorded tape on June 11. It was not found the following morning nor on any other surveys and was almost certainly a migrant. June 11 is within the normal spring migration period for this species in southern California, which extends from mid-May until mid-June (Small 1994, Unitt 2004, and personal experience).

From one to seven Brown-headed Cowbirds were observed or heard on 13 of 15 survey dates. The Brown-headed Cowbird is a brood parasite, i.e., it lays its eggs in the nests of smaller birds, which in turn devote so much time and energy to raising the cowbird chick that their own young seldom survive. In large part, because both the Least Bell's Vireo and the Southwestern Willow Flycatcher are favored host species of the Brown-headed Cowbird, both have been designated as endangered species. Trapping and removal of cowbirds from areas occupied by these endangered species has led to significant increases in Least Bell's Vireo populations throughout southern California but has not yet had a similar effect on Southwestern Willow Flycatcher populations.

If you have any questions or comments regarding this report please feel free to contact us at 949-272-0905.

Sincerely,

BLOOM BIOLOGICAL, INC.



H. Lee Jones, Ph.D.; Senior Biologist

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ATTACHMENT A. FAUNAL COMPENDIUM

This faunal compendium lists 76 bird, 5 mammal, 2 reptile and 2 amphibian species detected by BBI as of July 13, 2012 during raptor, riparian bird and California Gnatcatcher surveys.

Birds

Anseriformes - Screamers, Swans, Geese, and Ducks | Anatidae - Ducks, Geese, and Swans
- Mallard *Anas platyrhynchos*

Galliformes - Gallinaceous Birds | Odontophoridae - New World Quail
- California Quail *Callipepla californica*

Pelecaniformes - Pelicans, Herons, Ibises, and Allies | Ardeidae - Herons, Bitterns, and Allies
- Great Blue Heron *Ardea herodias*
- Cattle Egret *Bubulcus ibis*
- Green Heron *Butorides virescens*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Cathartidae - New World Vultures
- Turkey Vulture *Cathartes aura*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Accipitridae - Hawks, Kites, Eagles, and Allies
- White-tailed Kite *Elanus leucurus*
- Cooper's Hawk *Accipiter cooperii*
- Red-shouldered Hawk *Buteo lineatus*
- Red-tailed Hawk *Buteo jamaicensis*

Falconiformes - Caracaras and Falcons | Falconidae - Caracaras and Falcons
- American Kestrel *Falco sparverius*

Gruiformes - Rails, Cranes, and Allies | Rallidae - Rails, Gallinules, and Coots
- Virginia Rail *Rallus limicola*

Charadriiformes - Shorebirds, Gulls, Auks, and Allies | Charadriidae - Lapwings and Plovers
- Killdeer *Charadrius vociferus*

Columbiformes - Pigeons, and Doves | Columbidae - Pigeons and Doves
- Rock Pigeon *Columba livia*
- Eurasian Collared-Dove *Streptopelia decaocto*
- Mourning Dove *Zenaida macroura*

Cuculiformes - Cuckoos and Allies | Cuculidae - Cuckoos, Roadrunners, and Anis
- Greater Roadrunner *Geococcyx californianus*

Strigiformes –Owls | Strigidae – True Owls
- Burrowing Owl *Athene cunicularia*

Apodiformes - Swifts, and Hummingbirds | Apodidae - Swifts
- White-throated Swift *Aeronautes saxatalis*

Apodiformes - Swifts, and Hummingbirds | Trochilidae - Hummingbirds

Anna's Hummingbird *Calypte anna*
Costa's Hummingbird *Calypte costae*
Allen's Hummingbird *Selasphorus sasin*

Piciformes - Puffbirds, Jacamars, Toucans, Woodpeckers, and Allies | Picidae - Woodpeckers and Allies
Nuttall's Woodpecker *Picoides nuttallii*

Passeriformes - Passerine Birds | Tyrannidae - Tyrant Flycatchers
Black Phoebe *Sayornis nigricans*
Say's Phoebe *Sayornis saya*
Willow Flycatcher *Empidonax traillii*
Ash-throated Flycatcher *Myiarchus cinerascens*
Cassin's Kingbird *Tyrannus vociferans*
Western Kingbird *Tyrannus verticalis*

Passeriformes - Passerine Birds | Laniidae - Shrikes
Loggerhead Shrike *Lanius ludovicianus*

Passeriformes - Passerine Birds | Vireonidae - Vireos
Bell's Vireo *Vireo bellii*

Passeriformes - Passerine Birds | Corvidae - Crows and Jays
Western Scrub-Jay *Aphelocoma californica*
American Crow *Corvus brachyrhynchos*
Common Raven *Corvus corax*

Passeriformes - Passerine Birds | Alaudidae - Larks
Horned Lark *Eremophila alpestris*

Passeriformes - Passerine Birds | Hirundinidae - Swallows
Northern Rough-winged Swallow *Stelgidopteryx serripennis*
Cliff Swallow *Petrochelidon pyrrhonota*
Barn Swallow *Hirundo rustica*

Passeriformes - Passerine Birds | Paridae - Chickadees and Titmice
Oak Titmouse *Baeolophus inornatus*

Passeriformes - Passerine Birds | Aegithalidae - Long-tailed Tits and Bushtits
Bushtit *Psaltriparus minimus*

Passeriformes - Passerine Birds | Troglodytidae - Wrens
Canyon Wren *Catherpes mexicanus*
Bewick's Wren *Thryomanes bewickii*
House Wren *Troglodytes aedon*

Passeriformes - Passerine Birds | Polioptilidae - Gnatcatchers and Gnatwrens
California Gnatcatcher *Polioptila californica*

Passeriformes - Passerine Birds | Sylviidae - Sylviid Warblers
Wrentit *Chamaea fasciata*

Passeriformes - Passerine Birds | Mimidae - Mockingbirds and Thrashers

Northern Mockingbird *Mimus polyglottos*
California Thrasher *Toxostoma redivivum*

Passeriformes - Passerine Birds | Sturnidae - Starlings
European Starling *Sturnus vulgaris*

Passeriformes - Passerine Birds | Bombycillidae - Waxwings
Cedar Waxwing *Bombycilla cedrorum*

Passeriformes - Passerine Birds | Ptilogonatidae - Silky-flycatchers
Phainopepla *Phainopepla nitens*

Passeriformes - Passerine Birds | Parulidae - Wood-Warblers
Common Yellowthroat *Geothlypis trichas*
Yellow Warbler *Setophaga petechia*
Wilson's Warbler *Cardellina pusilla*
Yellow-breasted Chat *Icteria virens*

Passeriformes - Passerine Birds | Emberizidae – Emberizids
Spotted Towhee *Pipilo maculatus*
Rufous-crowned Sparrow *Aimophila ruficeps*
California Towhee *Melozone crissalis*
Lark Sparrow *Chondestes grammacus*
Sage Sparrow *Amphispiza belli*
Lark Sparrow *Chondestes grammacus*
Song Sparrow *Melospiza melodia*

Passeriformes - Passerine Birds | Cardinalidae - Cardinals and Allies
Black-headed Grosbeak *Pheucticus melanocephalus*
Blue Grosbeak *Passerina caerulea*
Lazuli Bunting *Passerina amoena*

Passeriformes - Passerine Birds | Icteridae - Blackbirds
Red-winged Blackbird *Agelaius phoeniceus*
Western Meadowlark *Sturnella neglecta*
Brewer's Blackbird *Euphagus cyanocephalus*
Great-tailed Grackle *Quiscalus mexicanus*
Brown-headed Cowbird *Molothrus ater*
Hooded Oriole *Icterus cucullatus*
Bullock's Oriole *Icterus bullockii*

Passeriformes - Passerine Birds | Fringillidae - Fringilline and Cardueline Finches and Allies
House Finch *Carpodacus mexicanus*
Lesser Goldfinch *Spinus psaltria*
Lawrence's Goldfinch *Spinus lawrencei*
American Goldfinch *Spinus tristis*

Passeriformes - Passerine Birds | Passeridae - Old World Sparrows
House Sparrow *Passer domesticus*

Mammals

Lagomorpha | Leporidae
- Brush Rabbit *Sylvilagus bachmani*
- Desert Cottontail *Sylvilagus audubonii*
- Black-tailed Jackrabbit *Lepus californicus*

Rodentia | Sciuridae
- California Ground Squirrel *Spermophilus beecheyi*

Carnivora | Canidae
- Coyote *Canis latrans*

Reptiles

Squamata | Phrynosomatidae
- Western Fence Lizard *Sceloporus occidentalis*
- Granite Spiny Lizard *Sceloporus orcutti*

Amphibians

Anura | Hylidae
- Pacific Chorus Frog *Pseudacris egilla*

Anura | Ranidae
- Bullfrog *Rana catesbeiana*

ATTACHMENT B. HABITAT PHOTOS



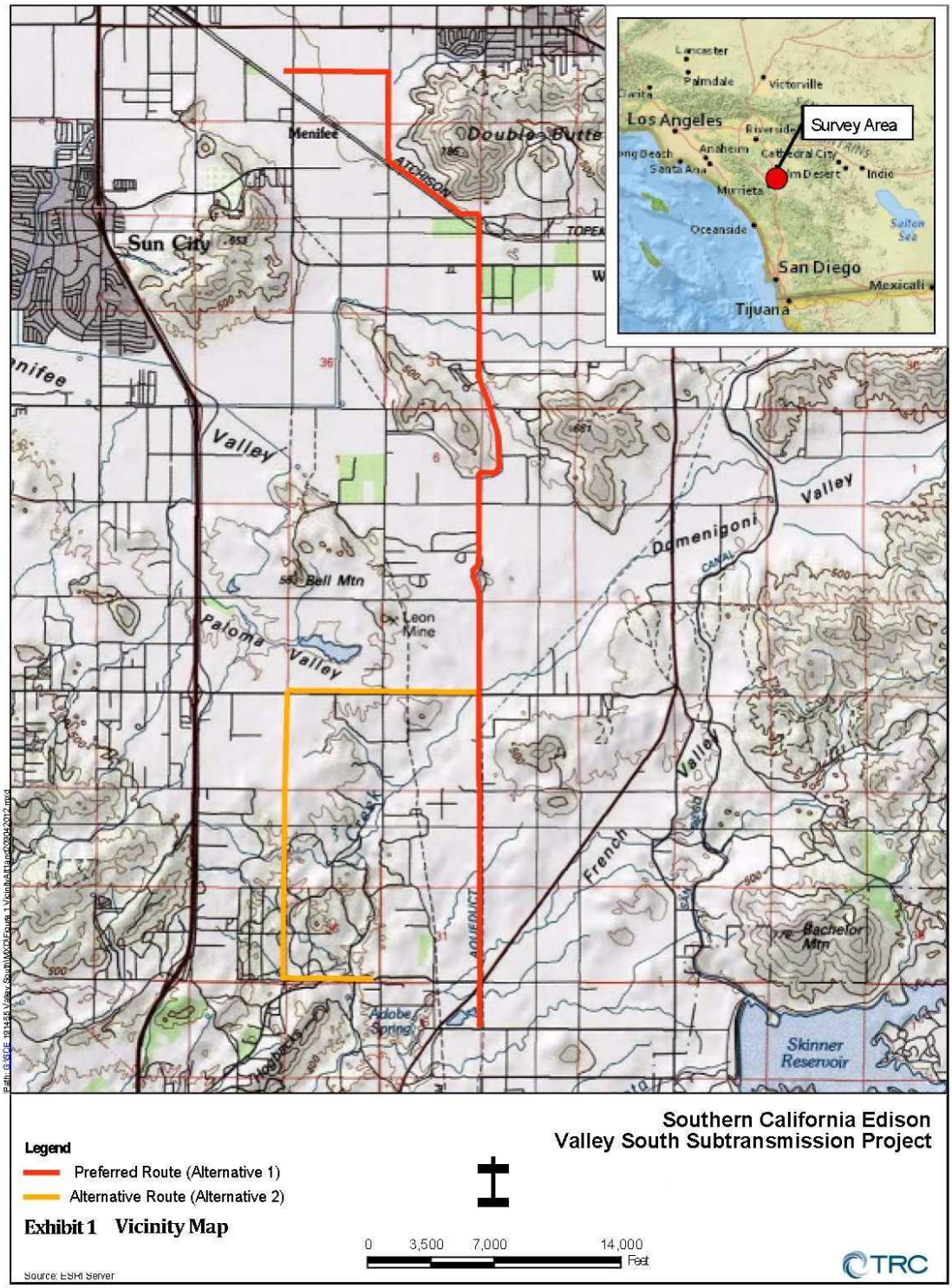
Photo 1. Willow riparian corridor along Warm Springs Creek at Los Alamos Rd.

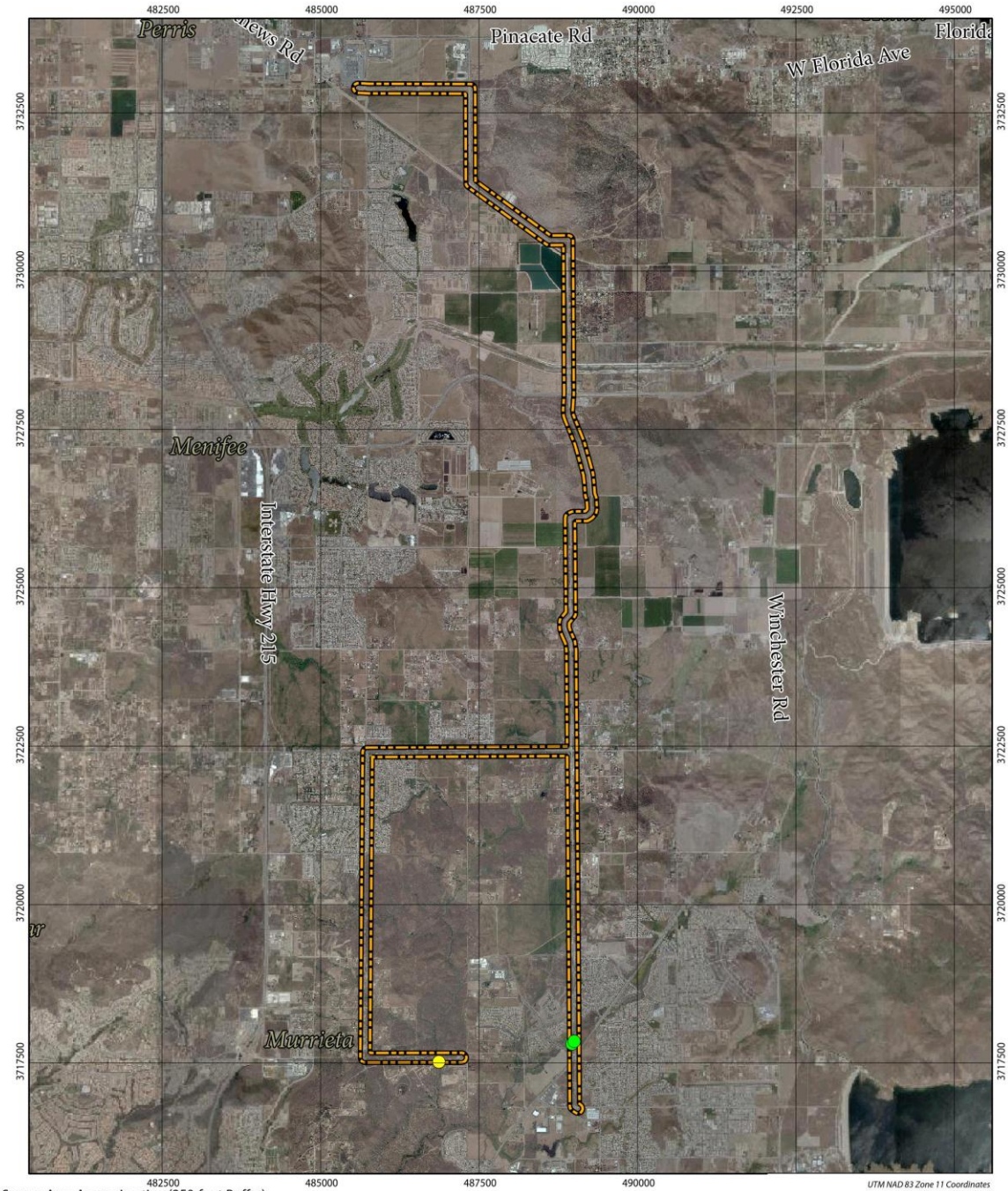


Photo 2. Willows at Warm Springs Creek where a Willow Flycatcher was seen on June 11.



Photo 3. Willow patch near intersection of Max Gilliss Rd. and Winchester Blvd. where a Least Bell's Vireo was found on two surveys.


Survey Area
Los Angeles
Lancaster
Palmdale
Victorville
Riverside
Anaheim
Santa Ana
Oceanside
San Diego
Tijuana
Mexicali
Indio
Menifee
Double Butte
Sun City
Valley
Domenigoni
Bell Mtn
Leon Mine
Paloma Valley
French Valley
Bachelor Mtn
Adobe Spring
Skinner Reservoir
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
Exhibit 1 Vicinity Map
Source: ESRI Server
0 3,500 7,000 14,000
Feet
Southern California Edison
Valley South Subtransmission Project
TRC



Survey Area Approximation (250-foot Buffer)

Survey Results
- *Bell's Vireo*
- *Willow Flycatcher*

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 24 July 2012
Aerial Photography: US Department of Agriculture

0 0.5 1 1.5 mi
1:80000

Exhibit 2: Survey Results
Valley South Subtransmission Project | Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

Appendix G:
Results of California Gnatcatcher Presence/Absence on Southern California Edison's Proposed Valley South Subtransmission Project Located in Western Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

August 27, 2012

Ms. Elisha Back
Principal
TRC Solutions, Inc.
4393 Viewridge Ave., Suite A
San Diego, California 92123

[via email]

Subject: Results of a California Gnatcatcher presence/absence survey on Southern California Edison's proposed Valley South Subtransmission Project located in western Riverside County, California

Dear Ms. Back:

Bloom Biological, Inc. (BBI) was retained by TRC Solutions, Inc. (TRC) to survey for California Gnatcatchers (*Polioptila californica*) along the Preferred (Alternative 1) and Alternative (Alternative 2) routes of Southern California Edison's (SCE) proposed Valley South Subtransmission Project (VSSP) located in western Riverside County, California. The purpose of the focused survey was to determine the presence or absence of California Gnatcatcher. California Gnatcatchers were found in two locations along the Preferred Route and in three areas along the Alternative Route. This letter report documents methods and provides details on the results of BBI's survey.

PROJECT DESCRIPTION

SCE is proposing the construction of the VSSP (Proposed Project) to serve current and projected demand for electricity, and maintain electric system reliability in portions of Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12 kV Substation. The proposed Valley-Triton 115 kV subtransmission line would be approximately 12 miles long.

- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system

- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

SURVEY AREA DESCRIPTION

A variety of biological resource surveys are being conducted along the proposed Preferred Route and Alternative Route of the VSSP. In general, the surveys are to be conducted within a 200 to 500-foot corridor depending on if the areas are developed or undeveloped along the routes. For the purposes of

standardized map-making, a 250-foot buffer is shown on the attached exhibit (Exhibit 1) and this is referred to herein as the "survey area".

The survey area comprises approximately 1,065 acres (431 hectares) located within and in the vicinity of the cities of Murietta and Menifee, Riverside County, California. On the Public Land Survey System, the survey area is located in all or portions of Sections 1 and 2 of Township 07S, Range 03W; Sections 5, 6 of Township 07S, Range 02W; Sections 13, 14, 23, 24, 25, 26, 35, and 36 of Township 06S, Range 03W; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31 of Township 06S, Range 02W; Sections 13, 14, and 24 of Township 05S, Range 03W; and Sections 18, 19, 30, 31, and 32 of Township 05S, Range 02W of the US Geological Survey's 7.5-minute *Bachelor Mountain, Murrieta, Romoland* and *Winchester* quadrangles (Exhibit 1). Elevations in the survey area range from 1,300 feet above mean sea level (amsl) in the south to 1,530 feet amsl in the north. The nearest major road to the survey area is Winchester Road (State Highway 79).

The proposed project occurs within a predominantly rural landscape with low-density human habitation, extensive agriculture, localized dense suburban development, and areas of undeveloped native vegetation. Coastal sage scrub, including Diegan Sage Scrub and Coastal Sage-Chaparral Scrub (sensu Holland 1986), is found in several discrete patches along both alignments but is most prevalent along the western and southern portions of the alternative alignment.

The Proposed Project occurs within the area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which was approved in 2003 as a large-scale, multi-jurisdictional, multiple-species planning mechanism pursuant to the Natural Communities Conservation Planning (NCCP) Act of 1991. The MSHCP also satisfies the requirements of a Habitat Conservation Plan (HCP) for federally listed species under the Endangered Species Act. The MSHCP, which conserves species and habitats as well as accounts for human development, defines "coverage" of species under the planning process as the anticipated adequate, long-term conservation of those species under full implementation of the plan.

NATURAL HISTORY OF THE CALIFORNIA GNATCATCHER

The California Gnatcatcher "is a local, uncommon, obligate resident of arid coastal scrub below about 500 m (1,500 ft) from eastern Orange and southwestern Riverside cos. south through the coastal foothills of San Diego Co.; along the immediate coast at Palos Verdes Peninsula, Los Angeles Co.; at Camp Pendleton and in Tijuana River Valley, San Diego Co. May still occur along lower, coastal slopes of San Gabriel and San Bernardino Mts., Los Angeles and San Bernardino cos., but status uncertain (Grinnell and Miller 1964, Garrett and Dunn 1981, Atwood 1990, 1993)."[1]

The California Gnatcatcher was listed as Threatened under the Federal Endangered Species Act in 1993 (58 FR 16742-16757) with Critical Habitat designated in 2000 (65 FR 63680-63743). Critical Habitat was revised in 2007 (72 FR 72010-72213).

METHODS

The standard U.S. Fish and Wildlife Service (FWS) breeding-season protocol (FWS 1997) for entities not enrolled in the state Natural Communities Conservation Planning program requires a minimum of six visits during the breeding season, March 15 through June 30; the standard non-breeding season protocol requires a minimum of nine surveys during the non-breeding season, July 1 through March 14. BBI Senior Biologist H. Lee Jones (Permit No. TE 829204-5) conducted five breeding-season surveys between May 8 and June 23 and two non-breeding season surveys between July 2 and July 13 according to the current

[1] California Department of Fish and Game. 2010. CWHR version 8.1 personal computer program. California Interagency Wildlife Task Force, Sacramento.

protocol for split-season surveys (unpublished FWS memorandum to all permittees). Because the total amount of sage scrub along the alignment exceeded the one-day maximum coverage area of 80 acres and sites were widely scattered along the alignments, each survey required two days to complete. All surveys were conducted between dawn and 12:00 p.m.

Surveys consisted of walking meandering transects in and adjacent to all CSS vegetation within 200-500[2] feet of the VSSP alignment. California Gnatcatcher vocalizations on iBird Pro© were played periodically within suitable habitat, the objective being to elicit a response from silent individuals that might not otherwise be detected. Once a gnatcatcher was detected, playing of the tape ceased in order to avoid further harassment.

Weather conditions and time of day were appropriate for maximizing the likelihood of gnatcatcher detection and are presented in Table 1. Temperatures ranged from 49.5 to 85° Fahrenheit.

Table 1. Field survey dates, times and weather conditions.

Date	Time	Weather	Biologist
05/08/12	0600-1200h	53.5-85° F; clear; calm	Lee Jones
05/09/12	0600-0910h	54-76° F; clear; calm	Lee Jones
05/18/12	0600-1100h	57-74° F; cloudy to clear; calm to wind W 1-5 mph	Lee Jones
05/19/12	0555-0745h	52-60° F; clear; calm	Lee Jones
06/01/12	0530-1005h	50.5-84° F; clear; calm	Lee Jones
06/02/12	0540-0830h	56-61.5° F; ground fog to 90% low overcast; calm	Lee Jones
06/11/12	0520-1010h	55-74° F; clear; calm	Lee Jones
06/12/12	0535-0755h	49.5-66.5° F; clear with light fog early; calm	Lee Jones
06/22/12	0530-0930h	59-65° F; ground fog to clear; calm	Lee Jones
06/23/12	0540-0835h	59-61° F; ground fog to clear; calm	Lee Jones
07/02/12	0535-0925h	56-70° F; ground fog to clear; calm to wind SE 2-4 mph	Lee Jones
07/03/12	0530-0755h	57.5-60.5° F; ground fog; calm	Lee Jones
07/12/12	0555-0910h	67-84.5° F; 50-100% cloud cover; calm to wind SE 4-6 mph	Lee Jones
07/13/12	0730-1230h	71-75° F; 90% cloud cover; calm	Lee Jones

RESULTS AND DISCUSSION

California Gnatcatchers were detected in five discrete areas along the Preferred and Alternative routes (numbered from north to south in Exhibit 2). Area 1 is the hill at the corner of Briggs Road and Matthews Road in Menifee. Area 2 is the southeastern corner of the range of hills that terminates at the bend in Leon Road just west of Año Crest Road south of Menifee. Area 3 is a half-mile undeveloped segment of Menifee Road (currently an SCE easement road) between Keller Road and Baxter Road. It is divided into two subcomponents, one north of a bisecting canyon with eucalyptus and willow trees and one south of this canyon. Area 4 is at the junction of Menifee Road and Running Rabbit Road east of Wildomar and north of Murrieta. Area 5 is in Murrieta along Clinton Keith Road from Ave Mañana to its junction with Los Alamos Road and then eastward along Los Alamos Road to Warm Springs Creek. Area 5 is subdivided into 3 subcomponents, western, central, and eastern. Areas 1 and 2 are along the Preferred Route, and Areas 3, 4, and 5 are along the Alternative Route.

Area 1: A female-plumaged California Gnatcatcher was seen on June 23 and July 13. Since no gnatcatchers were detected at this site on the other five survey dates, it is believed that this bird was either a juvenile, an unpaired adult female, or the female of a pair whose territory was primarily outside the survey corridor. It was not observed at close enough range on either occasion to determine if it was a juvenile or an adult female.

[2] The width of the survey corridor varied according to location and the extent of sage scrub present.

Area 2: Two adults and three fledglings were observed together on June 2; two birds were observed on June 12; a male and female were observed on June 23, and a single bird was heard on July 13, all in the same area. These observations pertain to one pair that successfully fledged three young.

Area 3: A pair was detected north of the eucalyptus/willow canyon (Area 3a) on May 18 and July 2, and a bird was heard in the same location on June 11. A male was observed covering a linear stretch of 650 ft south of this canyon on June 1, and a bird was heard previously in this same area by TRC biologist Travis Kegel on May 8 (Area 3b). Although birds were not found north and south of the canyon on the same date, it is believed that the distance between birds observed north and south of the canyon is too great to encompass only one California Gnatcatcher territory; therefore, it is likely that two territorial pairs were involved.

Area 4: A bird was heard on the edge of the alignment next to Running Rabbit Road (east of Menifee Road) on June 22. No birds were detected at or near this location on the six other surveys, suggesting that this may have been a dispersing juvenile.

Area 5: On June 1, a male was seen just south of Los Alamos Road between Etienne Circle and Warm Springs Creek. On June 11, a male was seen along Clinton Keith Road in the vicinity of Ave Mañana, and on July 2 a bird was heard at this same location. On June 22, a male was seen south of Los Alamos Road across from where Clinton Keith Road terminates, and on July 12, a bird was heard repeatedly in this same area. Although no more than one bird was detected on any one survey date along this 0.4-mile long corridor, these observations are consistent with multiple, incidental gnatcatcher locations mapped on single dates earlier in the spring of 2012 by TRC biologists. Therefore, these observations certainly represented at least two pairs and may have represented three pairs because of the distances separating observations.

The total number of pairs represented by all California Gnatcatcher observations along the VSSP alignments is difficult to determine because birds were often not detected in the same locations on multiple survey dates. Clearly, a pair fledged young in Area 2, and at least one pair (and likely two) was present in Area 3. Either two or three pairs were present along Clinton Keith and Los Alamos Roads. Single birds observed or heard in Areas 1 and 4 may have represented additional pairs, unpaired birds, or dispersing juveniles. The difficulty of consistent detections of birds along a linear, road-based project is exacerbated by the inclusion of only narrow edges of more extensive habitat blocks beyond the survey buffer.

During the course of this survey and BBI's other on-going sensitive species surveys, BBI biologists have been documenting all wildlife species observations. As of July 13, 2012, BBI biologists have detected 76 bird, 5 mammal, 2 reptile and 2 amphibian species in the survey area. The full list is of these species is provided in Attachment A.

If you have any questions or comments regarding this report please feel free to contact us 949-272-0905.

Sincerely,

BLOOM BIOLOGICAL, INC.

H. Lee Jones, Ph.D.
Senior Biologist

LITERATURE CITED

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ATTACHMENT A. FAUNAL COMPENDIUM

This faunal compendium lists 76 bird, 5 mammal, 2 reptile and 2 amphibian species detected by BBI as of July 13, 2012 during raptor, riparian bird and California Gnatcatcher surveys.

Birds

Anseriformes - Screamers, Swans, Geese, and Ducks | Anatidae - Ducks, Geese, and Swans
- Mallard *Anas platyrhynchos*

Galliformes - Gallinaceous Birds | Odontophoridae - New World Quail
- California Quail *Callipepla californica*

Pelecaniformes - Pelicans, Herons, Ibises, and Allies | Ardeidae - Herons, Bitterns, and Allies
- Great Blue Heron *Ardea herodias*
- Cattle Egret *Bubulcus ibis*
- Green Heron *Butorides virescens*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Cathartidae - New World Vultures
- Turkey Vulture *Cathartes aura*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Accipitridae - Hawks, Kites, Eagles, and Allies
- White-tailed Kite *Elanus leucurus*
- Cooper's Hawk *Accipiter cooperii*
- Red-shouldered Hawk *Buteo lineatus*
- Red-tailed Hawk *Buteo jamaicensis*

Falconiformes - Caracaras and Falcons | Falconidae - Caracaras and Falcons
- American Kestrel *Falco sparverius*

Gruiformes - Rails, Cranes, and Allies | Rallidae - Rails, Gallinules, and Coots
- Virginia Rail *Rallus limicola*

Charadriiformes - Shorebirds, Gulls, Auks, and Allies | Charadriidae - Lapwings and Plovers
- Killdeer *Charadrius vociferus*

Columbiformes - Pigeons, and Doves | Columbidae - Pigeons and Doves
- Rock Pigeon *Columba livia*
- Eurasian Collared-Dove *Streptopelia decaocto*
- Mourning Dove *Zenaida macroura*

Cuculiformes - Cuckoos and Allies | Cuculidae - Cuckoos, Roadrunners, and Anis
- Greater Roadrunner *Geococcyx californianus*

Strigiformes –Owls | Strigidae – True Owls
- Burrowing Owl *Athene cunicularia*

Apodiformes - Swifts, and Hummingbirds | Apodidae - Swifts
- White-throated Swift *Aeronautes saxatalis*

Apodiformes - Swifts, and Hummingbirds | Trochilidae - Hummingbirds

Anna's Hummingbird *Calypte anna*
Costa's Hummingbird *Calypte costae*
Allen's Hummingbird *Selasphorus sasin*

Piciformes - Puffbirds, Jacamars, Toucans, Woodpeckers, and Allies | Picidae - Woodpeckers and Allies
Nuttall's Woodpecker *Picoides nuttallii*

Passeriformes - Passerine Birds | Tyrannidae - Tyrant Flycatchers
Black Phoebe *Sayornis nigricans*
Say's Phoebe *Sayornis saya*
Willow Flycatcher *Empidonax traillii*
Ash-throated Flycatcher *Myiarchus cinerascens*
Cassin's Kingbird *Tyrannus vociferans*
Western Kingbird *Tyrannus verticalis*

Passeriformes - Passerine Birds | Laniidae - Shrikes
Loggerhead Shrike *Lanius ludovicianus*

Passeriformes - Passerine Birds | Vireonidae - Vireos
Bell's Vireo *Vireo bellii*

Passeriformes - Passerine Birds | Corvidae - Crows and Jays
Western Scrub-Jay *Aphelocoma californica*
American Crow *Corvus brachyrhynchos*
Common Raven *Corvus corax*

Passeriformes - Passerine Birds | Alaudidae - Larks
Horned Lark *Eremophila alpestris*

Passeriformes - Passerine Birds | Hirundinidae - Swallows
Northern Rough-winged Swallow *Stelgidopteryx serripennis*
Cliff Swallow *Petrochelidon pyrrhonota*
Barn Swallow *Hirundo rustica*

Passeriformes - Passerine Birds | Paridae - Chickadees and Titmice
Oak Titmouse *Baeolophus inornatus*

Passeriformes - Passerine Birds | Aegithalidae - Long-tailed Tits and Bushtits
Bushtit *Psaltriparus minimus*

Passeriformes - Passerine Birds | Troglodytidae - Wrens
Canyon Wren *Catherpes mexicanus*
Bewick's Wren *Thryomanes bewickii*
House Wren *Troglodytes aedon*

Passeriformes - Passerine Birds | Polioptilidae - Gnatcatchers and Gnatwrens
California Gnatcatcher *Polioptila californica*

Passeriformes - Passerine Birds | Sylviidae - Sylviid Warblers
Wrentit *Chamaea fasciata*

Passeriformes - Passerine Birds | Mimidae - Mockingbirds and Thrashers

Northern Mockingbird *Mimus polyglottos*
California Thrasher *Toxostoma redivivum*

Passeriformes - Passerine Birds | Sturnidae - Starlings
European Starling *Sturnus vulgaris*

Passeriformes - Passerine Birds | Bombycillidae - Waxwings
Cedar Waxwing *Bombycilla cedrorum*

Passeriformes - Passerine Birds | Ptilogonatidae - Silky-flycatchers
Phainopepla *Phainopepla nitens*

Passeriformes - Passerine Birds | Parulidae - Wood-Warblers
Common Yellowthroat *Geothlypis trichas*
Yellow Warbler *Setophaga petechia*
Wilson's Warbler *Cardellina pusilla*
Yellow-breasted Chat *Icteria virens*

Passeriformes - Passerine Birds | Emberizidae – Emberizids
Spotted Towhee *Pipilo maculatus*
Rufous-crowned Sparrow *Aimophila ruficeps*
California Towhee *Melozone crissalis*
Lark Sparrow *Chondestes grammacus*
Sage Sparrow *Amphispiza belli*
Lark Sparrow *Chondestes grammacus*
Song Sparrow *Melospiza melodia*

Passeriformes - Passerine Birds | Cardinalidae - Cardinals and Allies
Black-headed Grosbeak *Pheucticus melanocephalus*
Blue Grosbeak *Passerina caerulea*
Lazuli Bunting *Passerina amoena*

Passeriformes - Passerine Birds | Icteridae - Blackbirds
Red-winged Blackbird *Agelaius phoeniceus*
Western Meadowlark *Sturnella neglecta*
Brewer's Blackbird *Euphagus cyanocephalus*
Great-tailed Grackle *Quiscalus mexicanus*
Brown-headed Cowbird *Molothrus ater*
Hooded Oriole *Icterus cucullatus*
Bullock's Oriole *Icterus bullockii*

Passeriformes - Passerine Birds | Fringillidae - Fringilline and Cardueline Finches and Allies
House Finch *Carpodacus mexicanus*
Lesser Goldfinch *Spinus psaltria*
Lawrence's Goldfinch *Spinus lawrencei*
American Goldfinch *Spinus tristis*

Passeriformes - Passerine Birds | Passeridae - Old World Sparrows
House Sparrow *Passer domesticus*

Mammals

Lagomorpha | Leporidae
- Brush Rabbit *Sylvilagus bachmani*
- Desert Cottontail *Sylvilagus audubonii*
- Black-tailed Jackrabbit *Lepus californicus*

Rodentia | Sciuridae
- California Ground Squirrel *Spermophilus beecheyi*

Carnivora | Canidae
- Coyote *Canis latrans*

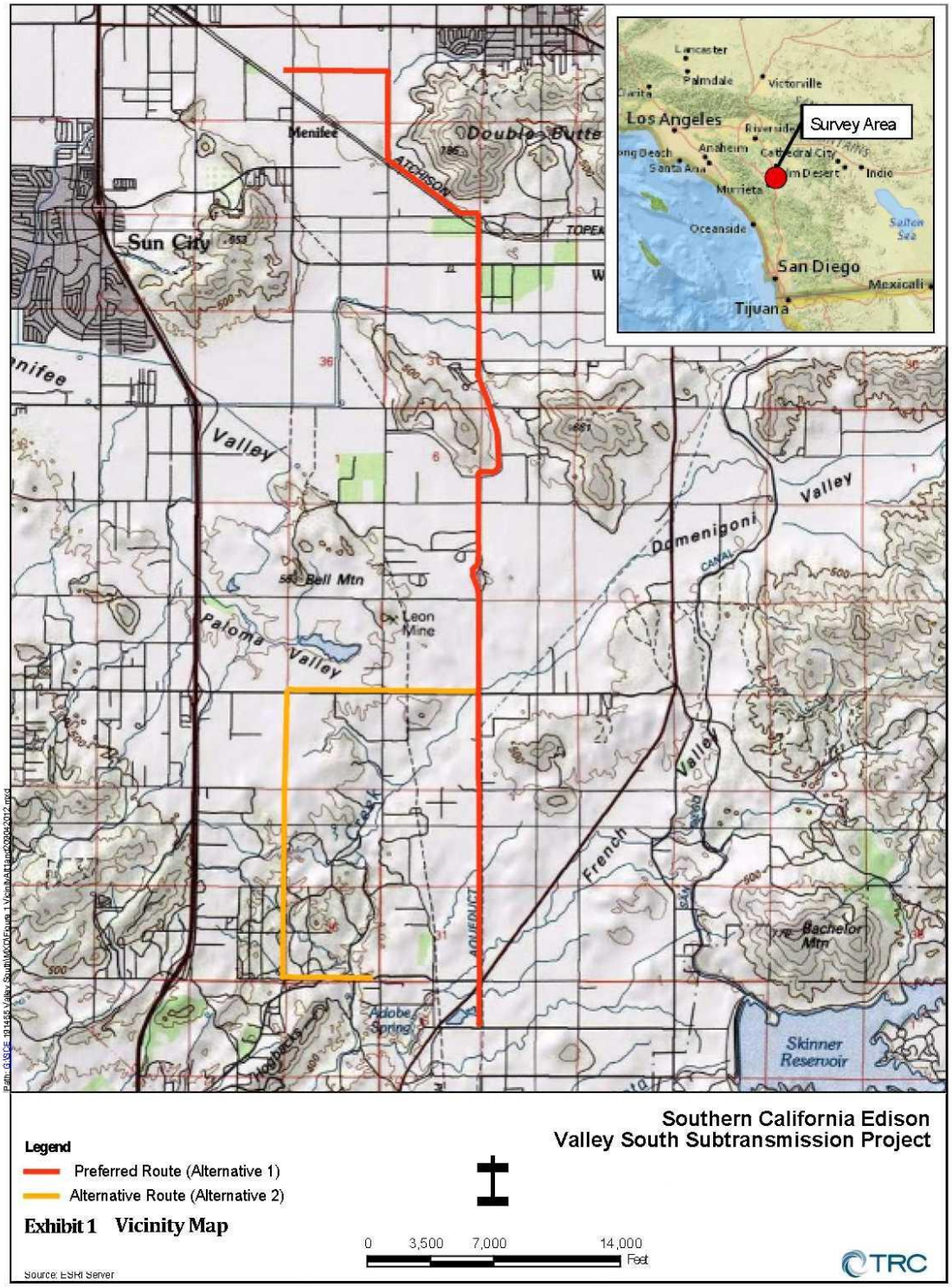
Reptiles

Squamata | Phrynosomatidae
- Western Fence Lizard *Sceloporus occidentalis*
- Granite Spiny Lizard *Sceloporus orcutti*

Amphibians

Anura | Hylidae
- Pacific Chorus Frog *Pseudacris egilla*

Anura | Ranidae
- Bullfrog *Rana catesbeiana*


Survey Area
Los Angeles
Palmdale
Victorville
Lancaster
Riverside
Anaheim
Santa Ana
Cathedral City
Indio
Murrieta
Oceanside
Salton Sea
San Diego
Mexicali
Tijuana
Menifee
Double Butte
ATCHISON
TOPEK
Sun City
Valley
Domenigoni
CANAL
Bell Mtn
Leon Mine
Paloma Valley
Cook
AQUEDUCT
French
Bachelor Mtn
Adobe Spring
Skinner Reservoir
Southern California Edison
Valley South Subtransmission Project
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
Exhibit 1 Vicinity Map
0 3,500 7,000 14,000
Feet
Source: ESRI Server
TRC

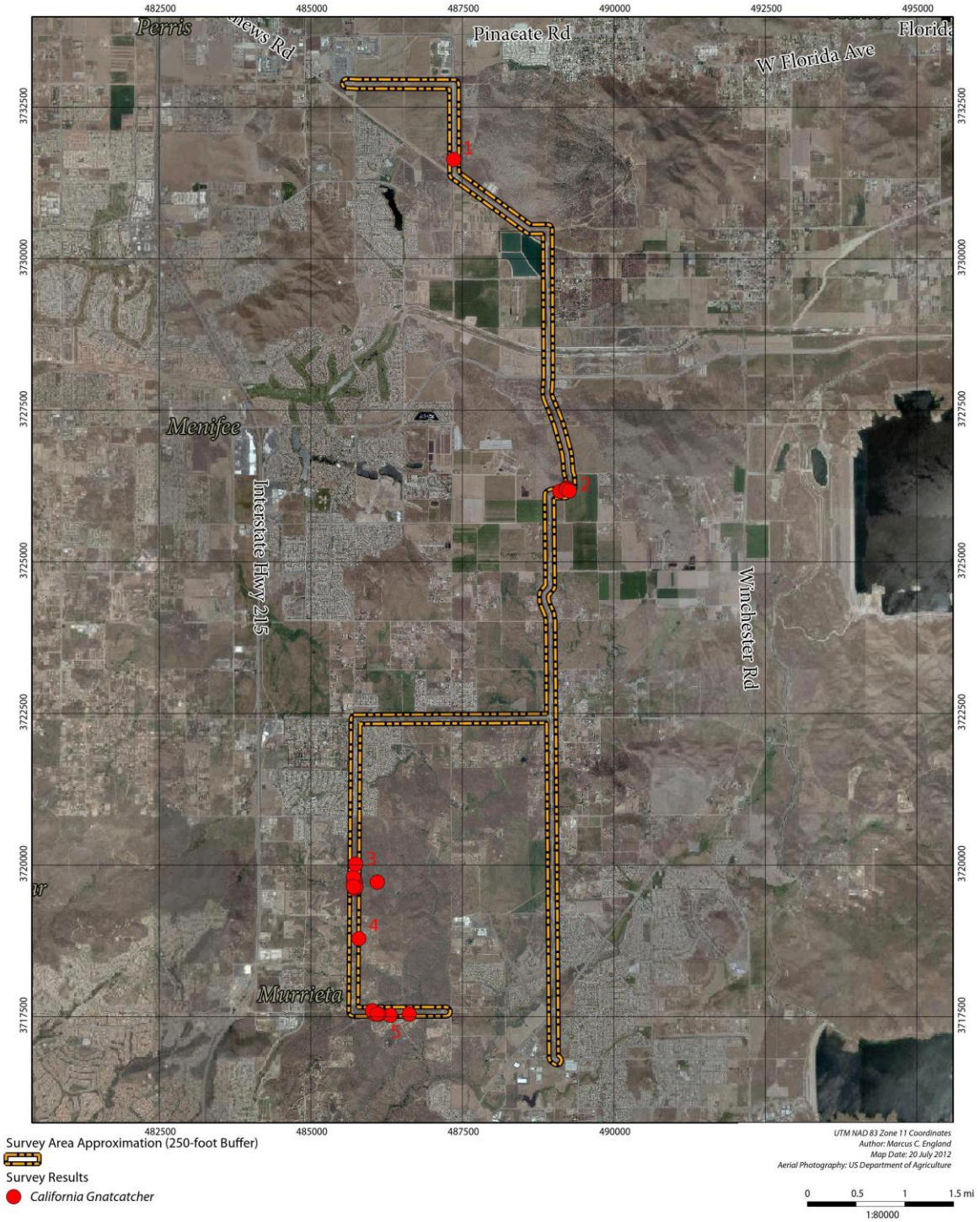


Exhibit 2: Survey Results
Valley South Subtransmission Project | Riverside County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

Appendix H:
Small Mammal Trapping Studies Valley South Subtransmission Project Parcel Analysis, County of Riverside, California

NATURAL RESOURCES ASSESSMENT, INC.

Small Mammal Trapping Studies
Valley South Subtransmission Project Parcel Analysis
County of Riverside, California

Prepared for:

TRC
123 Technology Drive
Irvine, CA 92618
860 298 6387

Prepared by:

Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, CA 92507
951 686 1141

September 6, 2012

Project Number: TRC11-101

CERTIFICATION

I hereby certify that the statements furnished below and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

This report was prepared in accordance with professional requirements and recommended protocols for small mammal trapping studies.

Karen Kirtland _____ Date

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Appendix A - Site Photos for the Alternative 1 and Alternative 2

Executive Summary

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by TRC to conduct a live-trapping effort for special status mammal species for the Valley South Subtransmission Project (VSSP) parcel analysis for Southern California Edison (SCE).

SCE is proposing the construction of the Proposed Project to serve current and projected demand for electricity, and maintain electric system reliability in portions of southern Riverside County including the cities of Murrieta, Menifee, Temecula, Wildomar, and the surrounding unincorporated communities within the county. The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) area.

The trapping work was required to determine the presence or absence of special status small mammal species as defined in the WRCMSHCP and the California Department of Fish and Game Special Animals list.

Trapping for small mammals was conducted according to protocols established for the Stephens kangaroo rat and informally adopted for other species. These protocols require a minimum of five nights of trapping under favorable weather conditions. Two trapping sessions were performed for this project.

A total of 256 individual small mammals comprising fourteen species were captured during the trapping effort for the project.

1.0 Introduction

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by TRC to conduct a live-trapping effort for special status mammal species for the Valley South Subtransmission Project (VSSP) parcel analysis. The parcel analysis is being prepared for Southern California Edison (SCE). The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) area.

The trapping survey was required to determine the presence or absence of special status small mammal species as defined in the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSCHP) and the California Department of Fish and Game Special Animals list.

The trapping survey was completed by Philippe Vergne of ENVIRA as a subcontractor to NRA, Inc. The study is part of the environmental documentation for the proposed construction of the subtransmission project.

This report describes the existing conditions of the project alignments, the general biological resources observed on site, and the results of the trapping studies.

2.0 Personnel Qualifications

2.1 Philippe Vergne

Mr. Philippe Vergne of ENVIRA holds U.S. Fish and Wildlife Service (USFWS) permit No. TE-831207-3 to trap and handle Stephens kangaroo rat (*Dipodomys stephensi*), San Bernardino kangaroo rats (*Dipodomys merriami parvus*), and Pacific pocket mouse (*Perognathus longimembris pacificus*) and conduct field studies of special status small mammals in Southern California.

Mr. Vergne also holds a California Department of Fish and Game Memorandum of Understanding for the above-mentioned species as well as the Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), the Palm Springs pocket mouse (*Perognathus longimembris bangsi*), the Palm Springs ground squirrel (*Spermophilus tereticaudus chlorus*), the white-eared pocket mouse (*Perognathus alticola alticola*), the Jacumba pocket mouse (*Perognathus longimembris internationalis*), the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and the Dulzura pocket mouse (*Chaetodipus californicus femoralis*). Mr. Vergne also holds a California Department of Fish and Game Scientific Collection permit.

2.2 Karen Kirtland

Ms. Karen Kirtland of NRA, Inc. holds U.S. Fish and Wildlife Service (USFWS) permit No. TE-831207-4 to trap and handle Stephens kangaroo rat, San Bernardino kangaroo rats (*Dipodomys merriami parvus*), and Pacific pocket mouse (*Perognathus longimembris pacificus*) and conduct field studies of special status small mammals in Southern California.

Ms. Kirtland also holds a California Department of Fish and Game Memorandum of Understanding for the above-mentioned species as well as the Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), the white-eared pocket mouse (*Perognathus alticola alticola*), the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and the Mojave river vole (*Microtus californicus mohavensis*). Ms. Kirtland also holds a California Department of Fish and Game Scientific Collection permit.

3.0 Project Description and Site Location

SCE is proposing the construction of the Valley South Subtransmission Project (Proposed Project) to serve current and projected demand for electricity, and maintain electric system reliability in portions of

Murrieta, Menifee, and unincorporated communities within the southern portion of Riverside County. The following points briefly describe the components included in the Proposed Project:

- Construction of a new Valley-Triton 115 kilovolt (kV) subtransmission line originating at SCE's existing Valley 500/115kv Substation and terminating near SCE's existing Auld 115/12 kV Substation. The proposed Valley-Triton 115 kV subtransmission line would be approximately 12 miles long.
- Installation of communication equipment at Triton Substation and Valley Substation to connect the proposed Valley-Triton 115kV to SCE's existing system.
- Modifications at SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required.

The project consists of two routes: 1) Alternative 1 (11.84 miles) and 2) Alternative 2 (14.25 miles). The survey area included an undefined buffer ranging from 100 to 250 feet, depending on site circumstances from the center line of the alignment.

4.0 Methods

4.1 Literature Review and Records Check

NRA, Inc. reviewed available information on the known special status resources in the area. The literature review included a review of standard field guides and texts on special status and non special status biological resources, as well as the following sources:

- List of special status biological resources provided by the California Natural Diversity Data Base (CNDDB).
- Information provided by the Western Riverside County Multiple Species Habitat Conservation Plan (WRCMSHCP) for the proposed routes described above.

NRA, Inc. also reviewed other available technical information on the biological resources of the site, including previous trapping surveys and discussed recent findings with researchers in the field. Please refer to the Reference section for a list of technical references.

4.2 Habitat Evaluation Survey

Mr. Philippe Vergne of ENVIRA evaluated the condition of the soils and plant communities on May 29, 2012 for Alternative 1 and Alternative 2. Mr. Vergne conducted an intensive search in all potential habitat areas for such diagnostic small mammal sign as scat, tracks, dust bowls and burrows. He also noted site characteristics such as topography and evidence of human use of the site.

The habitat evaluation was focused on finding suitable trapping locations for small mammals. The determination of habitat quality varies for each species and requires a detailed evaluation of the entire Alternative 1 and Alternative 2 alignments. Due to the effort involved, habitat characterization as low, medium and high for the different small mammal species was not conducted.

4.3 Trapping Surveys

Stephens kangaroo rat (SKR) trapping protocols were developed after the species was listed as endangered by the USFWS. Trapping protocols for most other special status small mammal species other than SKR have not been established. Therefore the trapping protocols that have been established for the SKR were used for all special status small mammal trapping.


Survey Area
Los Angeles
San Diego
Tijuana
Sun City
Double Butte
Valley
Domenigoni
Valley
Bell Mtn
Lee Mtn
Palomar
Valley
French
Valley
Bachelor Mtn
Skinner Reservoir
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0
3,500
7,000
14,000
Feet
Southern California Edison
Valley South Subtransmission Project
Vicinity Map
Figure 1
TRC

The current SKR protocol calls for five sequential nights of trapping, conducted when the species is active aboveground at night and preferably during a new moon phase. One trapping session was conducted from May 29 through June 3, 2012 and one session from June 6 through June 11, 2012 for the Alternative 1 and Alternative 2.

Trapping lines of varying length and numbers of traps were set at trapping Areas A through Q for the Alternative 1 and Alternative 2 (Figure 2). The type of trap used is the Sherman live-trap, 12 inches long, modified for kangaroo rat trapping.

Traps were placed in suitable habitat areas along the alignments and in adjacent suitable habitat, concentrating on locating traps in areas containing sandy soils. Areas with kangaroo rat and other small mammal sign (scat, burrows, tail drags) were also targeted. In general, traplines were not located in clay soils, because they typically do not support most small mammal species. Clay soils are hard-packed and tend to shrink and swell, making it difficult to construct and maintain burrows.

The trapping sampled most of the various types of topography where suitable habitat for the target species occurred (Figure 2). The terrain sampled ranged from very flat to somewhat hilly areas.

Each trap was baited with birdseed placed on the trip pan at the back. The traps were picked up and replaced each day. Each trap was set at dusk each night and inspected once during the night and at dawn the following morning. All animals were identified and released at the point of capture. Sex and age were determined for the SKR, LAPM and San Diego desert woodrat on the Alternative 1 and Alternative 2.

Weather conditions at the time of the trapping were noted. Photographs of habitat were taken as appropriate.

5.0 Results

5.1 Literature Review Results for Special Status Biological Resources

Four special status mammal species were identified by the CNDDB as potentially present in the vicinity of the project alignments. They are the SKR, the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), the Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), and the southern grasshopper mouse (*Onychomys torridus ramona*). NRA, Inc. also identified the San Diego desert woodrat (*Neotoma lepida*) as potentially present.

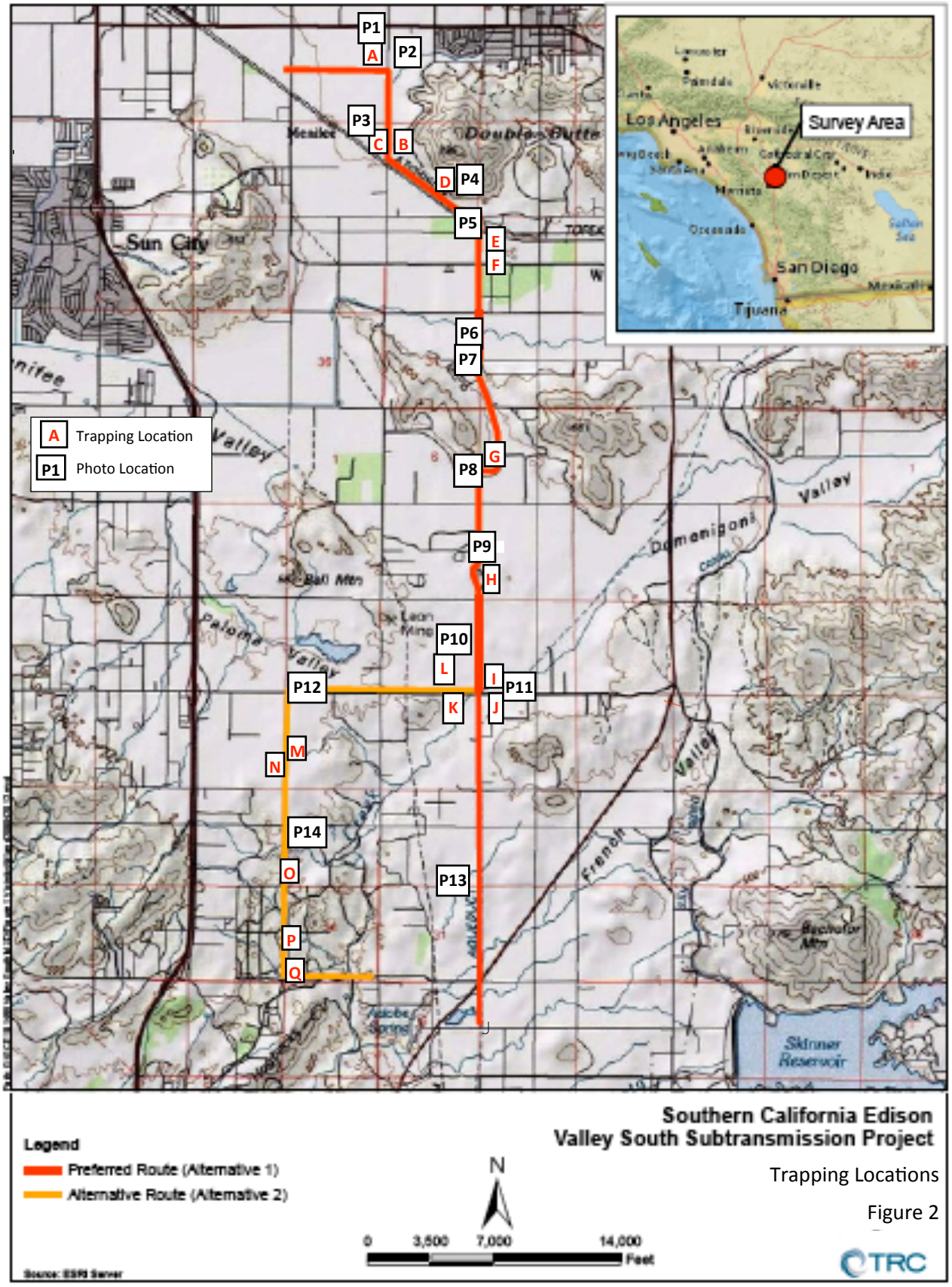
The WRCMSHCP identifies only the Los Angeles pocket mouse (LAPM) as a species of concern for this area. The SKR is covered by the separate and pre-existing SKR Habitat Conservation Plan, the provisions of which have been subsumed within the WRCMSHCP.

5.1.1 Stephens Kangaroo Rat

The SKR, a nocturnal rodent of the Family Heteromyidae, is one of several kangaroo rat species in its range. The Dulzura kangaroo rat (*Dipodomys simulans*) and the Pacific kangaroo rat (*Dipodomys agilis*) occur in areas occupied by the Stephens kangaroo rat, but these other species have a wider habitat range.

The SKR prefers open areas with sparse perennial cover (Lackey 1967, Bleich 1977, Thomas 1975). They occur in areas of loose soil where the soil depth is at least 0.5 meters (Price and Endo, 1989). SKR will also inhabit disturbed areas such as fallow fields by using the burrows of other rodents, including pocket gophers (*Thomomys bottae*) (Bleich 1977) and the Beechey ground squirrel (*Spermophilus beecheyi*) (O'Farrell 1989).

The SKR is primarily a seed eater, feeding on the seeds of both annual and shrub species. It also feeds on green vegetation and insects when these are available. Being primarily a desert species (like all kangaroo


P1
A
P2
P3
C
B
D
P4
P5
E
F
P6
P7
P8
G
P9
H
P10
L
I
P11
P12
K
J
M
N
P14
O
P13
P
Q
Survey Area
Los Angeles
San Diego
Tijuana
Sun City
Double Butte
Valley
Domenigoni
Skinner Reservoir
A Trapping Location
P1 Photo Location
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0 3,500 7,000 14,000
Feet
Southern California Edison
Valley South Subtransmission Project
Trapping Locations
Figure 2
TRC

rats), the SKR obtains nearly all of its water from the food it eats, and can subsist indefinitely on water extracted from dry seeds. It forages in open ground and near shrubs. Burrows are dug in loose soil, usually in open areas.

In response to habitat losses within a major portion of its range, SKR is listed as a threatened species by the California Department of Fish and Game (CDFG) and as endangered by the U.S. Fish and Wildlife Service (USFWS) (Kramer 1988). The designation of SKR as an endangered species resulted in the development of management plans with the aim of managing sustainable populations in different parts of the species range.

Project Findings

Five SKR were found during the trapping surveys for the Alternative 1 and Alternative 2. Based on the plant communities map prepared by TRC, one adult male was found in agricultural habitat at Trapping Location A, one subadult male in non-native grassland at Trapping Location B, one adult female each in non-native grassland at Trapping Locations G and M, and one adult male in non-native grassland at Trapping Location O.

5.1.2 Northwestern San Diego Pocket Mouse

The northwestern San Diego pocket mouse is one of five subspecies of the San Diego pocket mouse. The San Diego pocket mouse is a large species of pocket mouse, and is characterized by long spine-like hairs on the rump and hips. This characteristic differentiates this species group from the silky pocket mice of the genus *Perognathus*.

The San Diego pocket mouse is a common resident of open, sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California. The subspecies designated as the northwestern San Diego pocket mouse occurs in open scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland in the valleys and foothills of southwestern California (Hall 1981; Lackey 1996). This species is reported in high numbers in rocky and gravelly areas (Zeiner, et al 1990). Burrows can be found in sandy or gravelly soils. Higher densities in rocky and graveled areas are attributed to the greater availability of cover from visually oriented predators (Lackey 1996).

The northwestern San Diego pocket mouse primarily is a granivore (seed eater). Like other pocket mice, this species possess external, fur-lined cheek pouches for collecting and caching seeds. They eat grass seeds from summer to early winter, switching to shrub seeds and annual weed seeds for the rest of the year. They are nocturnal, active all year round (although surface activity is reduced during cold spells) and tend to forage under shrub and tree canopies, or around rock crevices (Lackey 1996).

Typical of desert adapted rodents, the northwestern San Diego pocket mouse likely has a relative low reproductive output. The typical litter size is four young.

The range of the full species includes mainly arid coastal and desert border areas in Orange, San Diego, Riverside, and San Bernardino counties. The northwestern San Diego pocket mouse subspecies is confined to Orange County and the coastal habitats of San Diego, Riverside and San Bernardino counties.

The northwestern San Diego pocket mouse appears to be special status to habitat fragmentation and degradation, and its historical range has been reduced by urban development and agriculture (California Department of Fish and Game 2012). As a result, the subspecies has been designated as a California Species of Special Concern by the California Department of Fish and Game (2012) and Lackey (1996).

Project Findings

Based on the plant communities map prepared by TRC, One northwestern San Diego pocket mouse was trapped in non-native grassland at Trapping Location Q during the work along the Alternative 1 and Alternative 2.

5.1.3 Los Angeles Pocket Mouse

The LAPM is one of two pocket mice found in this area of Riverside County (Williams 1986). Both the LAPM and the northwestern San Diego pocket mouse occupy similar habitats, but the northwestern San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of the Los Angeles pocket mouse is described as being confined to lower elevation grasslands and coastal sage scrub habitats, in areas with soils composed of fine sands (Williams 1986). This species prefers habitat similar to that of the SKR. It occurs in open sandy areas in the valley and foothills of southwestern California (Hall 1981).

The LAPM, like other subspecies of *Perognathus longimembris*, are granivorous rodents and specialize on grass and scrub seeds, but will take insects when available (French 1999; Meserve 1976). Pocket mice possess external, fur-lined cheek pouches used in collecting and caching of seeds. Seeds are cached for use during the colder months of the year.

They spend most of their foraging time in or near bushes, scrubs, rock crevices, or other sources of cover. The Los Angeles pocket mouse is primarily nocturnal and exhibits a distinct seasonal pattern in surface activity. During colder months the pocket mouse may enter into torpor (dormancy) and not engage in surface activity. This species may enter torpor as early as the end of September; the exact date being dependent on the nightly low temperatures and the availability of food.

At some point when surface conditions are very cold and food is scarce, the animal cannot meet its energy needs by foraging and thus must shut down surface activity to survive the winter. The LAPM must then survive on the food they have cached (Reichman and Price 1993). LAPM emerge in the spring when the surface ground temperatures are higher than the temperature in their burrows (French 1999).

The present known distribution of this species in Riverside and San Bernardino counties extends from the San Gabriel and San Bernardino mountains south to the Temecula and Aguanga areas, and from the east side of the Santa Ana Mountains east to Cabazon (Hall 1981).

The LAPM is listed as a California Species of Concern; its historical range has been impacted by the conversion of grassland and scrub habitats into residential, commercial and industrial uses.

Project Findings

Based on the plant communities map prepared by TRC, Two adult male LAPM were trapped in non-native grassland at Trapping Location B during the work along the Alternative 1 and Alternative 2.

5.1.4. Southern Grasshopper Mouse

The southern grasshopper mouse is a wide-ranging species that occurs in most of southern California up through the Central Valley. The species is found in arid habitats, including desert scrub, succulent shrub and along washes (Zeiner, et al. 1990). It is also found in coastal habitats such as coastal sage scrub, chaparral, sagebrush and other dry scrub habitats with low to moderately dense scrub cover and loose soils for digging (Ingles 1965, Zeiner, et al. 1990).

The southern grasshopper mouse is typically found in low densities throughout its range. The coastal subspecies of the southern grasshopper mouse (*Onychomys torridus ramona*) is confined to the coastal scrub habitats extending away from the desert edge and drier interior valleys found in the Central Valley.

The southern grasshopper mouse nests in burrows that were constructed and previously occupied by other rodents such as pocket gophers and kangaroo rat. Grasshopper mice prefer open areas and microhabitats that are usually dominated by gopher mounds and burrows. It appears these microhabitats are preferred because appear to attract insect prey, easier mobility due to lack of dense ground cover, and available dust bathing sites.

The majority of the southern grasshopper's diet consists of arthropods, such as beetles, scorpions, and grasshoppers, but they also eat small mammals (including pocket mice), salamanders, lizards, and frogs. Although this species diet consists almost entirely of animal material, it will also eat seeds. The grasshopper mouse is an active nocturnal predator, and most of its prey is terrestrial and nocturnal. Prey are stalked, rushed and seized and typically killed with a bite in the head or back of the neck.

Year-to-year survival appears to be low in the grasshopper mouse and juvenile mortality and dispersal rates appear to be very high. Life expectancy is probably less than 12 months in the field. Grasshopper mice are sexually mature at an early age and they can produce up to 12 litters in a year. Each litter can have 1 to 6 young. The peak breeding season is May through July and both males and females care for the young. The home range of the male extends up to eight acres, an unusually large area for a small rodent. Males are highly territorial and they employ a high-pitched, wolf-like call to ward off other males.

The Western Riverside County MSHCP displays no known occurrences of the southern grasshopper mouse within the vicinity of the proposed project alignments, but the actual distribution and population status of the grasshopper mouse in the MSHCP planning area is not well understood.

As with other coastal subspecies, the coastal southern grasshopper mouse is in decline due to the loss and degradation of habitat. This species is listed as a species of concern by both the USFWS and the CDFG, and is identified by the Bureau of Land Management as a Sensitive Species.

Project Findings

Based on the plant communities map prepared by TRC, one southern grasshopper mouse was trapped in non-native grassland at Trapping Location P during the work along the Alternative 1 and Alternative 2.

5.1.5 San Diego Desert Woodrat

The desert woodrat (*Neotoma lepida*) is a relatively wide-ranging species extending along the coast of California from south of San Francisco through to the border with Baja California. This species also occurs in the Central Valley and the deserts of southern California and along the desert side of the Sierra Nevada into southeastern Oregon.

The coastal race of the desert woodrat, the San Diego desert woodrat, prefers scrub habitats such as coastal sage scrub, chaparral and alluvial fan sage scrub. It is more common in areas with rock piles and coarse sandy to rocky soils throughout coastal southern California. The range of this species extends from just south of Sacramento and the San Francisco area to the border with Baja California.

The San Diego desert woodrat is active all year round. It is primarily nocturnal, but has been observed being active both and dawn and dusk and sometimes during the daylight hours.

Like most woodrats, the San Diego desert woodrat constructs houses in shrub canopies and on rock piles. These homes are usually made up of twigs, sticks, rocks and similar detritus. They appear to rock piles to other areas for construction (Ingles 1965). Nesting, food caching and protection from predation are all

served by these houses. Young are born live in these houses, usually from October to May. The average litter size is two to three young (Zeiner, D. C, et al. 1990).

The San Diego desert woodrat feeds on plant buds, fruits, seeds, bark, leaves and young shoots. Live oak, chamise and buckwheat are the primary food plants in coastal sage scrub (Zeiner, D. C, et al. 1990).

The San Diego desert woodrat is listed as a California Species of Concern; its historical range has been impacted by the conversion of scrub habitats into residential, commercial and industrial uses.

Project Findings

Based on the plant communities map prepared by TRC, One San Diego desert woodrat each was trapped in non-native grassland at Trapping Locations A and F and two San Diego desert woodrats were trapped in non-native grassland at Trapping Location M during the work along the Alternative 1 and Alternative 2.

5.2 Soils and Topography

The soils along the two alignments are derived from a variety of sources, but most of the soils are loams, ranging from fine sandy loams in the lower, flatter areas to rocky sandy loams in the hilly areas. There are also pockets of clay soils.

5.3 Plant Communities

There is a variety of plant communities along the two alignments. The trapping included non-native grasslands, agricultural areas, and scrub communities. Developed areas (commercial, residential and active agricultural fields) were not surveyed, except for suitable habitat along the boundaries of these areas. Please see Appendix A for site photos.

5.4 Small Mammal Trapping Surveys

5.4.1 Weather Conditions

Weather conditions did not vary much during the course of the trapping survey for the Alternative 1 and Alternative 2 (Table 1). Low temperatures were mostly in the mid fifites to low sixties degrees Fahrenheit. High temperatures were in the eighties Fahrenheit. Skies were variably cloudy but mostly clear. The lunar cycle was in the first quarter on May 29, 2012, becoming a full moon on June 4, 2012 and was in the last quarter on June 13, 2012.

Table 1. Weather Conditions for the Alternative 1 and Alternative 2

Date	Temperatures (High) (F)	Temperatures (Low) (F)	Cloud Cover	Wind Speed (miles per hour)	Moon Phase
First Trapping Session					
5/29/2012	85	63	Clear	0	First quarter
5/30/2012	86	61	Clear	0	Waxing gibbous
5/31/2012	91	58	Clear	0	Waxing gibbous
6/1/2012	90	60	20 percent	<3	Waxing gibbous
6/2/2012	85	60	Morning fog	<3	Waxing gibbous
6/3/2012	83	57	Morning fog	<3	Near full

Table 1. Weather Conditions for the Alternative 1 and Alternative 2

Date	Temperatures (High) (F)	Temperatures (Low) (F)	Cloud Cover	Wind Speed (miles per hour)	Moon Phase
Second Trapping Session					
6/6/2012	85	56	Partly cloudy	3-5	Past full
6/7/2012	92	59	Partly cloudy	3-5	Waning gibbous
6/8/2012	85	60	Clear	<3	Waning gibbous
6/9/2012	79	57	Clear	<3	Waning gibbous
6/10/2012	84	55	Clear	<3	Waning gibbous
6/11/2012	85	56	Clear	<3	Last quarter

5.4.2 Trapping Survey Results

A total of 256 individual small mammals comprising fourteen species were captured during the trapping effort for the Alternative 1 and Alternative 2. The locations of the SKR and the LAPM are provided in Figure 3 and the ongoing field record data base maintained by TRC.

Geographical Information System (GPS) location data are provided in Table 2 for the SKR, LAPM and the San Diego desert woodrat. Trapping results are given in Table 3 for the Alternative 1 and Alternative 2.

Table 2. Geographical Information System Data for Special Status Species Observed

	Universal Transverse Mercator Coordinates (UTM)		
	Stephens Kangaroo Rat	Los Angeles Pocket Mouse	San Diego Desert Woodrat
Trapping Location	*Dipodomys stephensi*	*Perognathus longimembris brevinasus*	*Neotoma lepida intermedia*
A	11S0487275 3732879		11S0487383 3731530
B	11S0488931 3726104	11S0487589 3731670 11S0487587 3731674	
F			11S0487321 3731673
G	11S0487583 3731673		
M	11S0485718 3720324		11S0489156 3726200
O	11S0485704 3719176		

6.0 Findings and Recommendations

Both alternatives have the potential to impact listed and special status species to varying degrees. Impacts to listed species would be significant and will require mitigation if take cannot be avoided. If impacts cannot be avoided, NRA, Inc. recommends that loss of habitat for listed species should be mitigated at a ratio and in a manner to be determined through consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

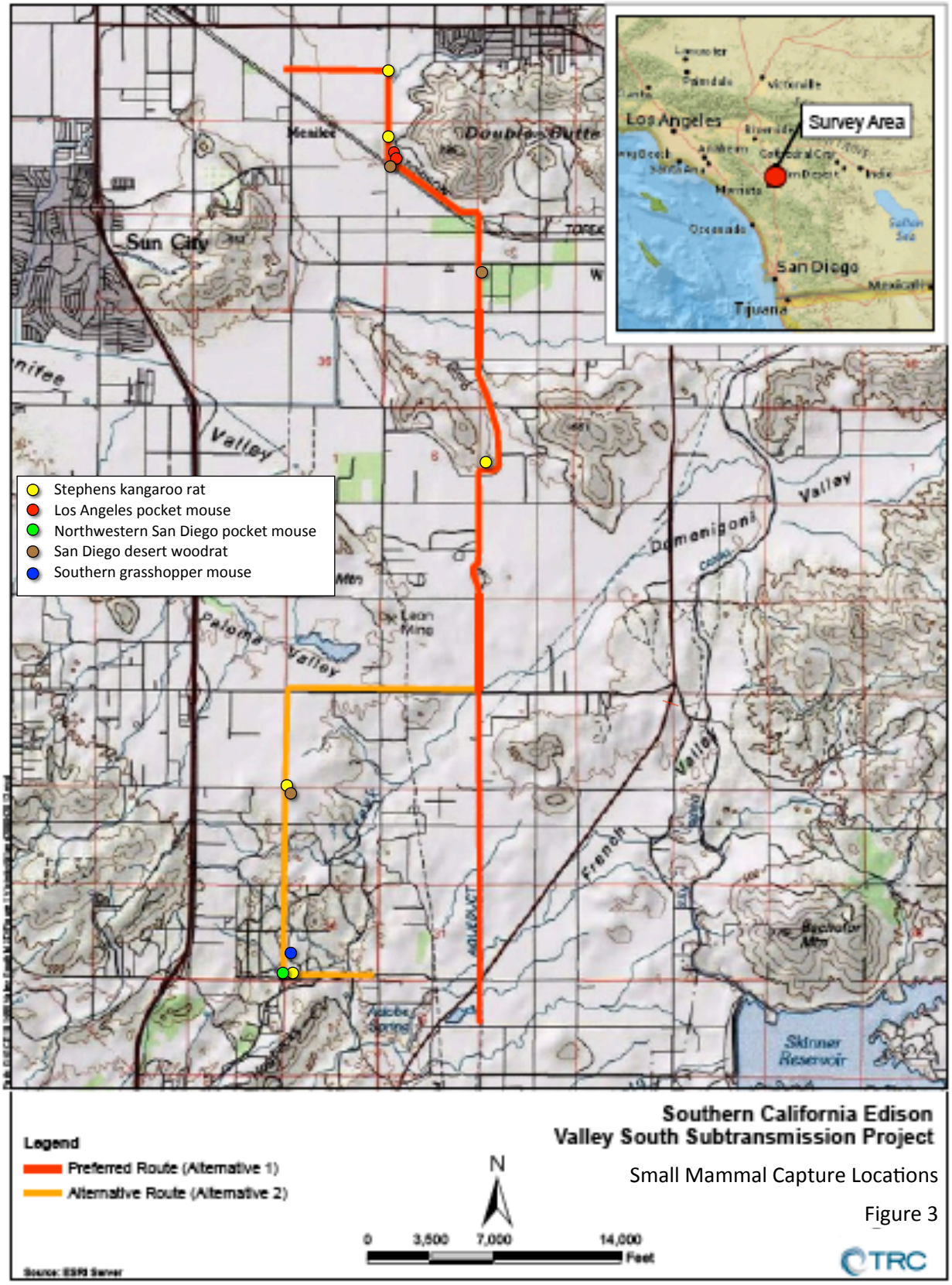

Survey Area
Los Angeles
San Diego
Tijuana
Double Butte
Sun City
Valley
Domenigoni
Skinner Reservoir
Stephens kangaroo rat
Los Angeles pocket mouse
Northwestern San Diego pocket mouse
San Diego desert woodrat
Southern grasshopper mouse
Legend
Preferred Route (Alternative 1)
Alternative Route (Alternative 2)
N
0
3,500
7,000
14,000
Feet
Southern California Edison
Valley South Subtransmission Project
Small Mammal Capture Locations
Figure 3
TRC

Table 3. Trapping Results for the Alternative 1 and Alternative 2

Trap Site	No. of Trap Nights	Stephens Kangaroo Rat *Dipodomys stephensi*	Dulzura Kangaroo Rat *Dipodomys simulans*	Deer Mouse *Peromyscus maniculatus*	Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Brush mouse *Peromyscus boylii*	Cactus mouse *Peromyscus eremicus*	Parasitic mouse *Peromyscusså californicus*	House mouse *Mus musculus*	Harvest mouse *Reithrodontomys megalotis*	San Diego Desert Woodrat *Neotoma lepida intermedia*	Dusky-footed woodrat *Neotoma fuscipes*	Northwestern San Diego Pocket Mouse *Chaetodipus fallax fallax*	Southern grasshopper mouse *Onychomys torridus ramona*	California vole *Microtus californica*
A	180	1AM	4	14					3		1				
B	240	1SAM	6	17	2AM		1		4						
C	300		2	11					3			1			
D	100		1	15											1
E	100			20											
F	150		4	16					2		1				
G	240	1AF	3	7			2		4			1			
H	150		2	9					1						
I	100			7											
J	100			4											
K	100			3						1					
L	75			9											
M	200	1AF	7	12			2	1			2				
N	100		1	9											
O	80	1AM	3	8		1			4			1			
P	75		2	6					1					1	
Q	75			4				1	2				1		
Totals	2,365	5	35	171	2	1	5	2	24	1	4	3	1	1	1

AM - adult male AF - adult female SAM - subadult male

NRA, Inc. recommends one of two possible mitigation measures for loss or damage to habitat:

1. Purchase of off site occupied habitat in the vicinity of the project, with the purchased habitat protected in perpetuity through conveyance to U.S. Fish and Wildlife Service, the California Department of Fish and Game, or some other acceptable ownership;

2. Provide a contribution of land or money to a program of habitat preservation comparable to the amount of habitat lost.

The finding for all listed species surveys are invalid after one year, especially if no positive findings are made. Therefore, we recommend a preliminary construction survey be conducted prior to the start of actual construction within habitat for listed species. At that time, any habitat for listed species requiring to be aside or avoided shall be identified.

Mitigation measures recommended for implementation during construction include:

1. The project proponent shall provide the U.S. Fish and Wildlife Service and the California Department of Fish and Game with the name(s), address(es), and phone number(s) of a field contact representative (FCR) responsible for overseeing compliance with protective measures for listed and special status species, and any biological monitor(s) contracted for project implementation. The FCR and biological monitor(s) shall have the authority to halt/suspend all associated project activities to avoid or minimize the unanticipated incidental take of listed species.

2. The project proponent shall ensure that a biological monitor, approved by the U.S. Fish and Wildlife Service and the California Department of Fish and Game, is present prior to and during initial clearing activities, to fully minimize the amount of disturbance by detecting any individuals or sign of listed and special status species occurring within the project area, assuring restrictive markers are in place and obeyed, and construction guidelines and Best Management Practices (BMPs) are followed. The biologist must have all valid permits and certifications.

3. The project proponent shall ensure that the limits of construction are marked prior to ground-disturbing activities and made clearly visible to personnel on foot and to heavy equipment operators. The biological monitor shall verify that the limits of construction have been properly staked and are readily identifiable. The movement of employees, construction contractors and subcontractors, and equipment, including ingress and egress of equipment and personnel, shall be limited to existing roads and designated construction limits.

4. Access to the disturbance site shall be via pre-existing access routes to the greatest extent possible.

5. Equipment storage, fueling, and staging areas will be located outside of native habitat; generally along dirt access roads and other developed areas.

6. All project personnel shall be required to attend an environmental awareness training program that will include discussion of the natural history of the special status species identified and the required measures to avoid and/or minimize project impacts.

7. Within the construction limits the project proponent shall ensure that all excavated, steep-walled holes or trenches more than two feet deep are backfilled at the close of each working day to prevent animals from entering the construction area and becoming trapped.

8. Trenches, holes, and any construction equipment stored at the site overnight shall be inspected for trapped animals each morning prior to the onset of construction. Any animals discovered

shall be removed from the trench, hole, or equipment by the permitted biologist and released outside the construction limits.

9. The project proponent shall ensure all equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas located outside of potential habitat for special status species.

10. The project proponent shall notify the U.S. Fish and Wildlife Service and the California Department of Fish and Game within 3 working days should any federally listed species be found dead or injured onsite for further instruction. Notification must include the date, time, and location of the carcass, and any other pertinent information.

11. The project proponent shall prohibit the use of rodenticides, herbicides, insecticides, or other chemicals that could potentially harm special status species within or adjacent to the project site.

12. Upon completion of the project, the project proponent shall submit to the U.S. Fish and Wildlife Service and the California Department of Fish and Game a report that summarizes the environmental compliance activities implemented during the construction period, any observations of listed species or their sign onsite or in the vicinity of construction activities, any changes in the project description or implementation schedule, and non-compliance/incidental reports and the resolution of each reported situation.

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Appendix A - Site Photos for the Alternative 1 and Alternative 2



Photo 1. Agricultural fields at the corner of the northern segment of the Alternative 1. Looking west.



Photo 2. Agricultural fields at the corner of the northern segment of the Alternative 1. Looking south.



Photo 3. Scrubby rocky habitat. At the western base of the Double Butte area. Looking northeast.



Photo 4. Scrubby rocky habitat. At the southern base of the Double Butte area. Looking southeast.



Photo 5. Agricultural area. Just north of Simpson Road looking south.



Photo 6. Pond habitat in Salt Creek north of Domengoni. Looking west.



Photo 7. Annual grasslands north of Domengoni Parkway and scrub habitat south of Domengoni Parkway. Looking south.



Photo 8. Annual grassland at curve just south of Domengoni Parkway. Looking south.



Photo 9. Mixed grassland and rocky habitat. Along the bend in Leon Road south of Domenigoni Parkway.



Photo 10. At the northeast corner of Scott Road and Leon Road. Rural residential. Looking west.



Photo 11. At the northeast corner of Scott Road and Leon Road. Start of residential development. Looking south.



Photo 12. Between residential development.



Photo 13. Riparian habitat. Looking south.
Northwest of the junction of State Route 79 and May Gillis Boulevard along the Alternative 1.



Photo 14. Along the south leg of Alternative 2.

APPENDIX I

Potential Special Status Plant Species

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
	Plants					
Brand's star phacelia	*Phacelia stellaris*	Federal: FC, SSC State: None CNPS: 1B.1 MSHCP: NE	Coastal dunes and coastal scrub. Occurs between 1 and 400 m.	Annual herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
California bearddtongue	*Penstemon californicus*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chapparral, Lower montane coniferous forest, pinyon and juniper woodland. Prefers sandy soils. Occurs between 1,170 and 2,300 m.	Perennial herb	May to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
California orcutt grass	*Orcuttia californica* var. *californica*	Federal: FE State: SE CNPS: 1B.2 MSHCP: NE	Vernal pools. Occurs between 15 and 660 m.	Annual herb	April to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, coastal scrub, desert dunes/sandy soils. Occurs between 80 and 1,600 m.	Annual herb	January to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: 1B.1 MSHCP:CA	Marshes, swamps (coastal salt), playas and vernal pools. Occurs between 1 and 1,220 m.	Annual herb	February to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS: 1B.2 MSHCP: CA	Coastal bluff scrub, coastal scrub. Prefers alkaline soils. Occurs between 10 and 200 m.	Annual herb	April to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Hammitt's clay-cress	*Sibaropsis hammittii*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Prefers clay substrate. Chaparral (openings), valley and foothill grasslands. Occurs between 720 and 1,065 m.	Annual herb	March to April	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Intermediate mariposa lily	*Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Rocky and calcareous substrate. Chaparral, coastal scrub, valley and foothill grassland. Occurs between 105 and 855 m.	Perennial bulbiferous herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Jaeger's milk-vetch	*Astragalus pachypus* var. *jaegeri*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky substrates. Occurs between 365 and 915 m.	Perennial shrub	December to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Johnston's rock cress	*Arabis johnstonii*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Often on eroded clay. Chaparral and lower montane coniferous forest. Occurs between 1,350 and 2,150 m.	Perennial herb	February to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Little mousetail	*Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS: 3.1 MSHCP: CA	Valley and foothill grassland, vernal pools (alkaline). Occurs between 20 and 640 m.	Annual herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Little purple monkey flower	*Mimulus purpureus*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Meadows and seeps, pebble (Pavement) plain, upper montane coniferous forest. Occurs between 1,900 and 2,300 m.	Annual herb	May to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland. Often prefers clay soils. Occurs between 30 and 1,530 m.	Annual herb	April to July	**Present**. Long-spined spine flower was observed within Diegan coastal sage scrub and NNG in shallow clay soil lenses. The largest population of long-spined spine flower was observed southeast of the Menifee and Keller Road intersection.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Mesa horkelia	*Horkelia cuneata* ssp. *puberula*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub. Prefers sandy or gravelly soil. Occurs between 70 and 810 m.	Perennial herb	February to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Mojave tarplant	*Deinandra mohavensis*	Federal: None State: None CNPS: 1B.3 MSHCP: None	Chaparral, coastal scrub and riparian scrub. Prefers mesic substrate. Occurs between 640 and 1,600 m.	Annual herb	June to January	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Mud nama	*Nama stenocarpum*	Federal: None State: None CNPS: 2.2 MSHCP: CA	Marshes and swamps (lake margins, riverbanks). Occurs between 5 and 500 m.	Annual / Perennial herb	January to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Munz’s onion	*Allium munzii*	Federal: FE State: ST CNPS: 1B.1 MSHCP: None	Mesic and clay soils. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Occurs between 297 and 1,070 m.	Perennial bulbiferous herb	March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Nevin's barberry	*Berberis nevinii*	Federal: FE State: SE CNPS: 1B.1 MSHCP: CA	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky soils. Occurs between 295 and 825 m.	Perennial evergreen shrub	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Orcutt's brodiaea	*Brodiaea orcuttii*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools. Prefers clay soils, sometimes serpentine. Occurs between 30 and 1,692 m.	Perennial herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Parish's brittlescale	*Atriplex parishii*	Federal: None State: None CNPS: 1B.1 MSHCP: CA	Chenopod scrub, playas, vernal pools. Prefers alkaline soils. Occurs between 25 and 1,900 meters.	Annual herb	June to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Parry's spineflower	*Chorizanthe parryi*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers sandy or rocky, openings. Occurs between 275 and 1,220 m.	Annual herb	April to June	**Present.** Parry's spine flower was observed within openings within CSS habitats and was generally associated with granitic soils. Observations were often associated with biotic crusts located below granite outcroppings and consistent with undisturbed soils.
Plummer's mariposa lily	*Calochortus plummerae*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Prefers granitic or rocky substrate. Occurs between 100 and 1,700 m.	Perennial bulbiferous herb	May to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Prostrate vernal pool navarretia	*Navarretia prostrata*	Federal: None State :None CNPS:1B.1 MSHCP: CA	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. Prefers mesic soils. Occurs between 15 and 1,210 m.	Annual herb	April to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Rainbow manzanita	*Arctostaphylos rainbowensis*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Chaparral. Occurs between 225 and 640 m.	Perennial evergreen shrub	January to February	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	Federal :None State: None CNPS: 1B.2 MSHCP: None	Chaparral and coastal scrub. Occurs between 1 and 885 m.	Annual herb	January to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Round-leaved filaree	*Erodium macrophyllum*	Federal: None State: None CNPS: 1B.1 MSHCP: None	Cismontane woodland, valley and foothill grassland. Occurs between 13 and 1,200 m.	Annual herb	March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Salt spring checkered bloom	*Sidalcea neomexicana*	Federal: None State: None CNPS: 2.2 MSHCP: None	Chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub, playas. Prefers alkaline and mesic soils. Occurs between 15 and 1,530 m.	Perennial herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Diego ambrosia	*Ambrosia pumila*	Federal :None State: None CNPS: 1B.2 MSCP: NE	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Often located in disturbed areas. Occurs between 20 and 415 m.	Perennial rhizomatous herb	April to October	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Federal: FE State: SE CNPS: 1B.1 MSCP: CS	Coastal scrub, valley and foothill grassland and vernal pools. Prefers mesic soils. Occurs between 20 and 620 m.	Annual / Perennial herb	April to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Jacinto Mountains bedstraw	*Galium angustifolium*	Federal: None State: None CNPS: 1B.1 MSHCP: NE	Lower montane coniferous forest. Occurs between 1,350 and 2,100 m.	Annual herb	June to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
San Jacinto Valley crownscale	*Atriplex coronata var. notatior*	Federal: FE State: None CNPS: 1B.1 MSHCP: CA	Playas, valley and foothill grassland and vernal pools. Prefers alkaline substrate. Occurs between 139 and 500 m	Annual herb	April to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
San Miguel savory	*Satureja chandleri*	Federal: None State: None CNPS: 1B.2 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Prefers rocky, gabbroic or metavolcanic soils. Occurs between 120 and 1,075 m.	Perennial shrub	March to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Santa Lucia dwarf rush	*Juncus luciensis*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Chaparral, great basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Occurs between 300 and 2,040 m.	Annual herb	April to July	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
slender-horned spineflower	*Dodecahema leptoceras*	Federal: FE State: SE CNPS: 1B.1 MSHCP: NE	Chaparral, cismontane woodland, coastal scrub (alluvial fan). Prefers sandy soil. Occurs between 200 and 760 m.	Annual herb	April to May (uncommonly in March)	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Smooth tarplant	*Centromadia pungens*	Federal: None State: None CNPS: 1B.1 MSCP: CA	Chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland. Prefers alkaline soils. Occurs between 0 and 640 m.	Annual herb	April to September	**Present.** Species was observed in 6 locations throughout the Project survey area. The smooth tarplant was generally associated with or near seasonally mesic sites located in loamy soils
South coast saltscale	*Artiplex pacifica*	Federal: None State: None CNPS: 1B.2 MSHCP: None	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Occurs between 0 and 140 m.		March to August	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Spreading navarretia	*Navarretia fossalis*	Federal: FT State: None CNPS: 1B.1 MSHCP: NE	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools. Occurs between 30 and 1,300 m.		March to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Thread-leaved brodiaea	*Brodiaea filifolia*	Federal: FT State: SE CNPS: 1B.1 MSHCP: CA	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools. Prefers clay substrate. Occurs between 25 and 1,219 m.	Perennial bulbiferous herb	March to June	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
Vail Lake ceanothus	*Ceanothus ophiochilus*	Federal: FT State: SE CNPS: 1B.1 MSCP: CA	Chaparral habitat. Prefers gabbroic or pyroxenite-rich outcrops. Only three occurrences are known of and occur near Vail Lake. Occurs between 580 and 1,065 m.	Perennial evergreen shrub	February to March	**Unlikely to occur.** Species was not detected during focused rare plant surveys.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	Federal: None State: None CNPS: 2.2 MSHCP: None	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Prefers sandy or gravelly. Occurs between 0 and 2,100 m.	Perennial herb	July to December	**Unlikely to occur.** Species was not detected during focused rare plant surveys..
Wright's trichocoronis	*Trichocoronis wrightii*	Federal: None State: None CNPS: 2.1 MSHCP: NE	Meadows and seeps, marshes and swamps, riparian forest and vernal pools. Prefers alkaline soils. Occurs between 5 and 435 m.	Annual herb	May to September	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Yucapia onion	*Allium marvinii*	Federal: None State: None CNPS: 1B.1 MSHCP: NE	Chaparral. Prefers clay substrate and openings. Occurs between 760 and 1,065 m.	Perennial bulbiferous herb	April to May	**Unlikely to occur.** Species was not detected during focused rare plant surveys.

SPECIES LISTING CODES

Legend

Federal (U.S. Fish and Wildlife Service)

FE Federally listed, endangered: species in danger of extinction throughout a significant portion of its range
FT Federally listed, threatened: species likely to become endangered within the foreseeable future
FPE Federally proposed, endangered
FPT Federally proposed, threatened
FPD Federally proposed, delisting

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ST State listed, threatened: species likely to become endangered within the foreseeable future
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SSC Species of Special Concern: administrative designation for vertebrate species that appears vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats

CNPS (California Native Plant Society)

1A Presumed extinct in California
1B Rare, threatened, or endangered in California and elsewhere
2 Rare, threatened, or endangered in California, but more common elsewhere
3 Need More Information - A Review List
4 Limited Distribution - A Watch List
.1 Seriously threatened in California
.2 Fairly threatened in California
.3 Not very threatened in California

Western Riverside County MSHCP

CA Criteria Area Plant
NE Narrow Endemic Plant

APPENDIX J

Potential Special Status Animal Species

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
	Invertebrates					
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	Federal: FE State: None MSCP/MSHCP:	Delhi sands soil type and dunes with open coastal sage scrub and grassland.		Active during hot weather from mid-summer to early fall (July September).	Improbable occurrence due to lack of suitable sand dune habitat within the Project survey area.
Quino checkerspot	*Euphydryas editha quino*	Federal: FE State: None MSCP/MSHCP:	Occurs in sunny openings within chaparral and coastal sage shrub, grasslands, and vernal pools, often along ridgelines and hilltops in parts of Riverside and San Diego Counties. The primary host plants for this species' larvae are *Plantago erecta*, *P. patagonica*, and *Castilleja exserta*.			CNDDB records within three miles. Potential habitat and larval host plants documented within Project survey area. Moderate to high probability of occurrence within Project survey area.
Riverside fairy shrimp	*Streptocephalus woottoni*	Federal: FE State: None MSHCP: covered	Vernal pools and other ephemeral wetlands within coastal sage scrub, valley and foothill grassland.			CNDDB records within three miles. Low probability of occurrence due to small amount of marginal habitat within the Project survey area.
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federal: FT State: None MSCP:	Vernal pools			CNDDB records within three miles. Low probability of occurrence due to small amount of marginal habitat within the Project survey area.
	Amphibians / Reptiles					

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Arroyo toad	*Anaxyrus californicus*	Federal: FE State: SSC MSCP/MSHCP: covered	Openly to sparsely vegetated gravelly or sandy washes, intermittent streams, and major rivers on both side of the desert divide mountains. Requires seasonal flows in open floodplains with persistent pools for breeding.			Low probability of occurrence in the Project survey area due to small amount of marginal habitat and location beyond currently known range of the species (USFWS 1998c).
Mountain yellow-legged frog	*Rana mucosa*	Federal: FE State: SSC, SP MSCP/MHSCP:	Perennial or persistent mountain streams with rocky banks and sunny openings in surrounding vegetation (Lemm 2006).			Low probability of occurrence in the Project survey area due to small amount of marginal stream habitat and low elevations isolated
Coast horned lizard	*Phrynosoma coronatum*	Federal: None State: SSC MSHCP: covered	Coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.			CNDDB records within three miles. Documented at several locations throughout the Project survey area during 2012 survey.
Coast range newt	*Taricha torosa torosa*	Federal: None State: SSC MSCP: CS	Occur along coastline and in the Sierra Nevada. Prefer less humid climates, rock crevices and logs. When breeding, slow moving pools in coastal streams are occupied.			Low proability of occurrence in Project suevey area due to lack of extensive, persistent pools and mesic woodland vegetation.
Coastal whiptail	*Aspidoscelis tigris stejnegeri*	Federal: None State: None MSHCP: covered	Occurs in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas.			CNDDB records within three miles. Documented at several locations throughout the Project survey area during 2012 survey.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Granite night lizard	*Xantusia henshawi henshawi*	Federal: none State: none MHSCP: covered	Extensive outcrops of large granitic boulders, especially with fissures. Within various scrub, grassland, and woodland vegetation types.			High probability of occurrence in boulder outcropos within Project survey area.
Granite spiny lizard	*Sceloporus orcuttii*	Federal: none State: none MHSCP: covered	Extensive outcrops of large granitic boulders, especially with fissures. Within various scrub, grassland, and woodland vegetation types.			Documented within Project survey area during 2012 survey.
Orange-throated whiptail	*Aspidoscelis hyperythra*	Federal: None State: SSC MSHCP: covered	Openly vegetated areas with sandy or loose soil within coastal sage scrub, chaparral, and valley-foothill hardwood habitats. Requires termite colonies for food.			CNDDB records within three miles. Documented within Project survey area during 2012 survey.
Red diamond rattlesnake	*Crotalus ruber*	Federal: None State: SSC MSHCP: covered	Primarily coastal sage scrub and chaparral, but also open woodland, grassland, and desert fringe areas on both sides of dividing ranges. Prefers rocky areas with rodent burrows, rock fissures, or other surface cover objects.			Documented within Project survey area during 2012 survey.
San Bernardino mountain kingsnake	*Lampropeltis zonata parvirubra*	Federal: None State: SSC MSCP: covered				Improbable occurrence in Project surevey area due to generally low elevations and lack of continuity with montane topography and wooded habitats. Low probability of association with extensive bouder outcrops.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
San Diego mountain kingsnake	*Lampropeltis zonata pulchra*	Federal: none State: SSC MSHCP: covered				Improbable occurrence in Project surevey area due to generally low elevations and lack of continuity with montane topography and wooded habitats. Low probability of association with extensive bouder outcrops.
San Diego banded gecko	*Coleonyx variegatus abbottii*	Federal: none State: none MSHCP: covered	Occurs in arid areas including creosote flats, sagebrush desert, pinion-juniper woods, and chaparral. Prefers rocky areas, but may occur in rock-free areas such as sand dunes.			Moderate probability of occurring in extensive boulder outcrops.
Silvery legless lizard	*Anniella pulchra pulchra*	Federal: none State: SSC MSHCP: none	Loose, often sandy soil with suitable moisture content for burrowing. Sparsely vegetated areas, including beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.			Moderate probability of occurrence in loose soils, particularly in bottomlands.
Southern sagebrush lizard	*Sceloporus graciosus vandenburgianus*	Federal: none State: none MSHCP: covered	Open rocky or sandy areas in montane chaparral or forest.			Improbable occurrence in Project surevey area due to generally low elevations and lack of continuity with montane topography and habitats.
Two-striped garter snake	*Thamnophis hammondii*	Federal: none State: SSC MSHCP: none	Coastal California up to 2,135 meters elevation, in or near permanent or persistent fresh water. Prefers streams with rocky beds and riparian growth.			Documented within Project survey area during 2012 survey.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Western pond turtle	*Emys marmorata*	Federal: none State: SSC MSHCP: covered	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.			Low probability of occurrence due to lack of suitable perennial wetland habitat.
Western spadefoot	*Spea hammondii*	Federal: none State: SSC MSHCP: covered	Requires seasonal surface water such as vernal pools for breeding in grassland and open scrub habitas, but can be found in valley-foothill hardwood woodlands.			CNDDB records within three miles. Documented at two locations within Project survey area during 2012 survey.
Birds						
American bittern	*Botaurus lentiginosus*	Federal: none State: none MSHCP: covered	Dense marsh.			Low to moderate probability of occurrence in marshes in southern part of Project survey area.
American kestrel	*Falco sparverius*	Federal: none State: none MSHCP: none	Expanses of any of various types of open vegetation, including anthropogenic conversions (e.g., farmland). Requires secluded, suitable tree or other cavities for nesting.			Documented within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
American peregrine falcon	*Falco peregrinus anatum*	Federal: BCC State: FP NCCP: CS	Widespread throughout California, prefers open habitat, coastlines, lake edges and mountain chains. Nests on cliff sides or utilized abandoned nests made by large birds but does not build its own nest.			Low probability of occasional occurrence for foraging. No nesting habitat within the Project survey area.
Bell's sage sparrow	*Amphispiza belli belli*	Federal: BCC State: WL MSCP/MSHCP:	Chaparral consisting of relatively dense stands of chamise.			Documented within Project survey area.
California gnatcatcher	*Polioptila californica*	Federal: Threatened State: SSC MSHCP: covered	Coastal sage scrub vegetation, generally below 2000 feet elevation.			Documented within Project survey area.
California horned lark	*Eremophila alpestris actia*	Federal: none State: SSC MSHCP: covered	Coastal regions, short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.			Documented within Project survey area.
Cactus wren	*Campylo-rhynchus brunneicapillus*	Federal: BCC State: SSC MSHCP: covered	Foraging and breeding habitat is coastal sage scrub with patches of tall prickly pear and coastal cholla (Opuntia littoralis and O. oricola). Nests almost exclusively in prickly pear and coastal cholla.			Low probability of occurrence due to lack of adequate cactus stands.
Cooper's hawk	*Accipiter cooperii*	Federal: None State: WL MSCP/MSHCP:	Inhabits broken woodlands, woodland edges and streamside groves. Nests in open woodlands or in deciduous trees in riparian areas.			Documented within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Ferruginous Hawk	*Buteo regalis*	Federal: BCC State: WL MSHCP: covered	Requires large, open tracts of grasslands, sparse shrub, or desert habitats with elevated structures for nesting.			CNDDB records within three miles. High probability of occurrence within Project survey area in winter months.
Golden eagle	*Aquila chrysaetos*	Federal: BCC State: FP, SSC MSHCP: covered	Inhabits rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons, rocky outcrops, and large trees provide nesting habitat.			Documented immediately adjacent to Project survey area.
Grasshopper sparrow	*Ammodramus savannarum*	Federal: none State: SSC MSHCP: covered	Inhabits grassland, upland meadow, pasture, hayfield, and old field habitats. Nests on ground.			Low probability of occurrence. Potential habitat occurs within the Project survey area, but this species was not recorded in the course of extensive field work in the area.
Great blue heron	*Ardea herodias*	Federal: none State: Sensitive at nest sites MSHCP: covered	Occurs near large bodies of salt or fresh water and wetland habitats, such as rivers, lake edges, marshes, and seacoasts. Nests colonially in trees or large shrub groves near water.			Improbable occurrence within Project survey area as a nesting species. Sparingly recorded during 2012 field surveys.
Least Bell's vireo	*Vireo bellii pusillus*	Federal: FE State: SE MSHCP: covered	Forages and nests in lowland riparian vegetation with dense cover in lower layers. Occurs below 610 meters elevation.			Documented within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Loggerhead shrike	*Lanius ludovicianus*	Federal: BCC State: SSC MSHCP: covered	Large tracts of grassland, agricultural fields, or other open terrain. Intolerant ig high human density. Small, often isolated trees or dense shrubs required fpr nesting. Frequently use fences and thorny shrubs for hunting perches and for impaling prey.			Documented within Project survey area.
Merlin	*Falco columbarius*	Federal: none State: WL (wintering) MSHCP: covered	Wide-ranging species wintering in many open habitats such as grassland, farmland, coastal sage scrub, marshes, and developed areas.			High probability of occasional winter occurrence within the Project survey area.
Mountain plover	*Charadrius montanus*	Federal: FC, BCC State: SSC (wintering) MSCP: covered	Large expanses of short grassland, rangeland, and plowed fields.			Moderate probability of winter occurrence within the Project survey area.
Northern harrier	*Circus cyaneus*	Federal: none State: SSC MSHCP: covered	Extensive grassland and marsh edges. Occasionally open coastal sage scrub. Nests in grassland.			Documented within Project survey area.
Osprey	*Pandion haliaetus*	Federal: None State: WL MSCP: CS	Associated with large, fish-bearing waters. Occurs in riparian forests, primarily in ponderosa pine though mixed conifer habitats.			Low probability of occasional foraging occurrence at the artificial reservoir in northern part of Proposed Project.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Prairie falcon	*Falco mexicanus*	Federal: BCC State: WL (nesting) MSHCP: covered	Large, wild expanses of grassland, desert, and other open terrain. Suitable secluded cliffs required for nesting.			Documented within Project survey area. Low probability of nesting within the Project survey area.
Red-shouldered hawk	*Buteo lineatus*	Federal: none State: None MSHCP: none	Occurs mainly in swamp and forest habitats. They use the same nesting site from year to year.			Documented within and adjacent Project survey area in 2012.
Red-tailed hawk	*Buteo jamaicensis*	Federal: none State: None MSHCP: none	Widespread across many elevations and habitat types, but requires presence of a nesting tree or cliff in proximity to open foraging areas. Tolerant of human land uses. Nest sites considered sensitive.			Documented nesting within and adjacent to the Project survey area during 2012 survey.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	Federal: None State: WL MSHCP: covered	Coastal sage scrub and sparse mixed chaparral, often on rocky hillsides with patches of grass and herbaceous vegetation.			Documented within Project survey area in 2012.
Willow flycatcher	*Empidonax traillii*	Federal: FE State: SE MSHCP: covered	Mature, extensive cottonwood-willow riparian forest.			Documented within Project survey area.
Swainson's hawk	*Buteo swainsoni*	Federal: BCC State: ST MSCP: covered	Large expanses of wildland or rural areas consisting of native or non-native tree stands for nesting and nearby open fields for foraging.			Low probability of occurrence as a transient spring migrant within the Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Tricolored blackbird	*Agelaius tricolor*	Federal: BCC State: SSC MSHCP: covered	Dense freshwater marsh or low woody wetland habitats required for compact nesting colonies. Adjacent grassland, agriculture, or open coastal sage scrub required for foraging.			Moderate to high probability of sporadic establishment of nesting colony in marsh.
Turkey vulture	*Cathartes aura*	Federal: none State: none MSHCP: covered	Searches for forage aerially above virtually any vegetation type or terrain, except dense human development. Secluded cliff ledge or rock fissure in remote, rugged terrain required for nesting. Native or non-native tree groves in lwlands often used as winter roosts.			Documented in vicinity of the Project survey area. No potential breeding habitat occurs within the survey area, but groves of non-native trees may serve as non-breeding roosts.
Western burrowing owl	*Athene cunicularia*	Federal: BCC State: SSC MSHCP: covered	Arid and semi-arid environments with gentle terrain and open, low vegetation supporting burrowing mammals. Typically inhabits grasslands, pasturelands, open scrublands, and agricultural margins.			Documented within Project survey area. See survey results included in this report.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Federal: FC, BCC State: SE MSHCP: covered	Mature and extensive willow-cottonwood riparian forests along the broad lower floodplains of larger river systems.			Improbable sporadic occurrence as a migrant in limited riparian areas within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
White-tailed kite	*Elanus leucurus*	Federal: None State: FP NCCP: None	Lowland terrestrial habitats, in particular, riparian woodlands, and oak or sycamore groves near grasslands.			Documented within Project survey area.
White-faced ibis	*Plegadis chihi*	Federal: None State: WL MSHCP: covered	Freshwater marsh, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense freshwater marsh.			Documented in vicinity of Project survey area, but improable use of any habitats within the Project survey area.
Yellow warbler	*Dendroica petechia*	Federal: BCC State: SSC MSHCP: covered	Mature riparian forest consisting of willow, cottonwood, aspen, sycamore, or alders for nesting and foraging, but will also nest in montane shrubbery in open conifer forests.			Documented within Project survey area during 2012 survey.
Yellow-breasted chat	*Icteria virens*	Federal: None State: SSC MSCP/MSHCP:	Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nesting occurs in low, dense riparian areas.			Documented within Project survey area during 2012 survey.
Mammals						
Long-tailed weasel	*Mustela frenata*	Federal: none State: none MSHCP: covered	Broad range of vegetation types and elevations, but generally occurs in large undeveloped areas. In coastal lowlands inhabits scrub and grassland habitats.			Documented within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Los Angeles pocket mouse	*Perognathus longimembris brevinasus*	Federal: none State: SSC MSHCP: covered	Lower elevation grasslands and coastal sage communities in the Los Angeles basin. Prefers open ground with fine, sandy soils.			CNDDB records within three miles. Documented within Project survey area.
Mountain lion	*Felis concolor*	Federal: none State: none MSHCP: covered	Many different habitats within a large range. It typically inhabits remote mountainous areas near reliable water sources.			Improbable occasional occurrence within Project survey area due to extensive agricultural conversion of the landscape and lack of dense vegetation cover.
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	Federal: none State: SSC MSCP: covered	Inhabits arid coastal and desert border areas with sandy herbaceous areas, usually in association with rocks or coarse gravel.			CNDDB records within three miles. Documented within Project survey area.
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	Federal: FE State: SSC MSCP: covered	Inhabits alluvial scrub/coastal sage scrub habitats on gravelly and sandy soils adjoining river and stream terraces, and on alluvial fans. Rarely dense vegetation or rocky washes.			Improbable occurrence due to extirpation of populations in the Project survey area, which is part of the histpric range of this subspecies.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	Federal: none State: SSC MSHCP: covered	Inhabits herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats.			CNDDB records within three miles. Documented within Project survey area.
San Diego desert woodrat	*Neotoma lepida intermedia*	Federal: none State: SSC MSCP: covered	Inhabits a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders , cacti, or areas of dense undergrowth			Documented within Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	GROWTH FORM	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Southern grasshopper mouse	*Onychomys torridus ramona*	Federal: None State: SSC MSCP: none	Inhabits flat, sandy, valley floor habitats.			CNDDB records within three miles. Documented within Project survey area.
Stephens' kangaroo rat	*Dipodomys stephensi*	Federal: FE State: ST MSCP: covered	Inhabits annual and perennial grassland habitats, but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas.			CNDDB records within three miles. Documented within Project survey area.

SPECIES LISTING CODES

Legend

Federal (U.S. Fish and Wildlife Service)

FE Federally listed, endangered: species in danger of extinction throughout a significant portion of its range
FT Federally listed, threatened: species likely to become endangered within the foreseeable future
FPE Federally proposed, endangered
FPT Federally proposed, threatened
FPD Federally proposed, delisting
BCC Birds of Conservation Concern: migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities and draw attention to species in need of conservation action

Federal (Bureau of Land Management)

BLMS Bureau of Land Management Sensitive: species *not* designated on federal or state lists as endangered, threatened, candidate, or proposed, but given special management consideration

State (California Department of Fish and Game)

SE State listed, endangered: species in danger of extinction throughout a significant portion of its range
ST State listed, threatened: species likely to become endangered within the foreseeable future
SCE State candidate, endangered
SCT State candidate, threatened
SCD State candidate, delisting
FP Fully protected: additional protection to those animals that are rare or possibly facing extinction
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WL Watch List

CNPS (California Native Plant Society)

1A Presumed extinct in California
1B Rare, threatened, or endangered in California and elsewhere
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3 Need More Information - A Review List
4 Limited Distribution - A Watch List
.1 Seriously threatened in California
.2 Fairly threatened in California
.3 Not very threatened in California

Western Riverside County MSHCP[1]

CA Criteria Area Plant
NE Narrow Endemic Plant
CS Covered Species

sp. Singular abbreviation for species; never italicized
spp. Plural abbreviation for species; never italicized
ssp. Singular abbreviation for subspecies; never italicized
sspp. Plural abbreviation for subspecies; never italicized
var. Abbreviation for variety, a category within a subspecies; never italicized

[1] May apply to other HCPs.

Appendix K:
Soil Types

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
AuC	Auld clay, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
AuD	Auld clay, 8 to 15 percent slopes	Consociation	Not prime farmland
AyF	Auld cobbly clay, 8 to 50 percent slopes	Consociation	Not prime farmland
BfC	Bosanko clay, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
BkC2	Buchenau silt loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
BxC2	Buren loam, deep, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
CaC2	Cajalco fine sandy loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
CaD2	Cajalco fine sandy loam , 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
CaF2	Cajalco fine sandy loam , 15 to 35 percent slopes, erode d	Consociation	Not prime farmland
CbD2	Cajalco rocky fine sandy loam , 5 to 15 percent slopes, eroded	Complex	Not prime farmland
CbF2	Cajalco rocky fine sa ndy loam , 15 to 50 percent slopes, eroded	Complex	Not prime farmland
Ce	Chino silt loam, drained	Consociation	Prime farmland if irrigated and drained
Cf	Chino silt loam, drained, saline-alkali Consociation		Farmland of statewide importance
ChC	Cieneba sandy loam, 5 to 8 percent slopes	Consociation	Not prime farmland
ChD2	Cieneba sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
ChF2	Cieneba sandy loam , 15 to 50 percent slopes, eroded	Consociation	Not prime farmland
CkD2	Cieneba rocky sandy loam , 8 to 15 percent slopes, eroded	Complex	Not prime farmland

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
CkF2	Cieneba rocky sandy loam, 15 to 50 percent slopes, erod ed	Complex	Not prime farmland
Ds2	Domino fine sandy loam, eroded	Consociation	Farmland of statewide importance
Dt	Domino fine sandy loam, saline-alkali	Consociation	Farmland of statewide importance
Du Dom	ino silt loam	Consociation	Farmland of statewide importance
Dv	Domino silt loam, saline-alkali	Consociation	Farmland of statewide importance
Dw	Domino silt loam, strongly saline-alkali	Consociation	Not prime farmland
EcC2	Escondido fine sandy loam , 2 to 8 percent slopes, erode d	Consociation	Farmland of statewide importance
EcD2	Escondido fine sandy loam , 8 to 15 percent slopes, erod ed	Consociation	Not prime farmland
EcE2	Escondido fine sandy loam , 15 to 25 percent slopes, ero ded	Consociation	Not prime farmland
EfF2	Escondido rocky fine sandy loam , 8 to 50 percent slopes , eroded	Complex	Not prime farmland
EnA	Exeter sandy loam, 0 to 2 percent slopes	Consociation	Farmland of statewide importance
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
EoB	Exeter sand y loam , slightly saline -alkali, 0 to 5 perce nt slopes	Consociation	Farmland of statewide importance
EpA	Exeter sandy loam, deep, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
EwB	Exeter very fine sandy loam, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
FaD2	Fallbrook sandy loam , 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
FfC2	Fallbrook fine sandy loam , 2 to 8 percent slopes, erode d	Consociation	Farmland of statewide importance

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
FkD2	Fallbrook fine sandy loam, shallow, 8 to 15 percent slo pes, eroded	Consociation	Not prime farmland
FwE2	Friant fine sandy loam , 5 to 25 percent slopes, eroded	Consociation	Not prime farmland
FyE2	Friant rocky fine sandy loam , 8 to 25 percent slopes, e roded	Complex	Not prime farmland
GaA	Garretson very fine sandy loam , 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
GaC	Garretson very fine sandy loam , 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
GtA	Grangeville fine sandy loam , drained, 0 to 2 percent sl opes	Consociation Prim	e farmland if irrigated and drained
GvB	Grangeville fine sandy loam , saline-alkali, 0 to 5 perc ent slopes	Consociation	Farmland of statewide importance
GyA	Greenfield sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
HcA	Hanford coarse sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
HcD2	Hanford coarse sandy loam, 8 to 15 percent slopes, erod ed	Consociation	Farmland of statewide importance
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
HnC	Honcut sandy loam, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
HuC2	Honcut loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
LaC	Las Posas loam, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
LaC2	Las Posas loam, 5 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
LaD2	Las Posas loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
LaE3	Las Posas loam , 8 to 25 percent slopes, severely eroded	Consociation	Not prime farmland
LkF3	Las Posas rocky loam , 15 to 50 percent slopes, severely eroded	Complex	Not prime farmland
LoF2	Lodo gravelly loam , 15 to 50 percent slopes, eroded	Consociation	Not prime farmland
LpE2	Lodo rocky loam, 8 to 25 percent slopes, eroded	Complex	Not prime farmland
LpF2	Lodo rocky loam, 25 to 50 percent slopes, eroded	Consociation	Not prime farmland
MmB	Monserate sandy loam, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
MmD2	Monserate sandy loam , 8 to 15 percent slopes, eroded	Consociation	Farmland of statewide importance
MnD2	Monserate sandy loam , shallow, 5 to 15 percent slopes, eroded	Consociation	Not prime farmland
PaA	Pachappa fine sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
PaC2	Pachappa fine sandy lo am, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
PoC	Porterville clay, 0 to 8 percent slopes	Consociation	Prime farmland if irrigated
PsC	Porterville clay, m oderately deep, 2 to 8 percent slope s	Consociation	Farmland of statewide importance

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
PtB	Porterville clay, m oderately d eep, s lightly sa line-alka li, 0 to 5 percent slopes	Consociation	Farmland of statewide importance
PvD2	Porterville gravelly clay, moderately deep, 2 to 15 per cent slopes, eroded	Consociation	Farmland of statewide importance
RaA	Ramona sandy loam, 0 to 2 percent slopes	Consociation	Prime farmland if irrigated
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	Consociation	Prime farmland if irrigated
RaB3	Ramona sandy loam , 0 to 5 percent slopes, severely erod ed	Consociation	Prime farmland if irrigated
RaC2	Ramona sandy loam, 5 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
RtF	Rockland	Consociation	Not prime farmland
VaE3	Vallecitos loam , 8 to 25 percent s lopes, severe ly erode d	Consociation	Not prime farmland
VeC2	Vallecitos loam, thick solum variant, 2 to 8 percent sl opes, eroded	Consociation	Prime farmland if irrigated
VeD2	Vallecitos loam , thick solum variant, 8 to 15 percent s lopes, eroded	Consociation	Not prime farmland
VsC	Vista coarse sandy loam, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
VsD2	Vista coarse sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
VtF2	Vista ro cky coarse san dy loam , 2 to 35 percent slopes, eroded	Complex	Not prime farmland
Wg	Willows silty clay, saline-alkali	Consociation	Farmland of statewide importance
WxD2	Wyman fine sandy loam , 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
WyC2	Wyman loam, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
YbC	Yokohl loam, 2 to 8 percent slopes	Consociation	Not prime farmland
YbD2	Yokohl loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland

Appendix K: Soil Types

Map Code	Name and Slope	Soil Type	Farmland Status
AuC	Auld clay, 2 to 8 percent slopes	Consociation	Prime farmland if irrigated
AuD	Auld clay, 8 to 15 percent slopes	Consociation	Not prime farmland
AyF	Auld cobbly clay, 8 to 50 percent slopes	Consociation	Not prime farmland
BfC	Bosanko clay, 2 to 8 percent slopes	Consociation	Farmland of statewide importance
BkC2	Buchenau silt loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
BxC2	Buren loam, deep, 2 to 8 percent slopes, eroded	Consociation	Prime farmland if irrigated
CaC2	Cajalco fine sandy loam, 2 to 8 percent slopes, eroded	Consociation	Farmland of statewide importance
CaD2	Cajalco fine sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
CaF2	Cajalco fine sandy loam, 15 to 35 percent slopes, erode d	Consociation	Not prime farmland
CbD2	Cajalco rocky fine sandy loam, 5 to 15 percent slopes, eroded	Complex	Not prime farmland
CbF2	Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded	Complex	Not prime farmland
Ce	Chino silt loam, drained	Consociation	Prime farmland if irrigated and drained
Cf	Chino silt loam, drained, saline-alkali	Consociation	Farmland of statewide importance
ChC	Cieneba sandy loam, 5 to 8 percent slopes	Consociation	Not prime farmland
ChD2	Cieneba sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not prime farmland
ChF2	Cieneba sandy loam, 15 to 50 percent slopes, eroded	Consociation	Not prime farmland
CkD2	Cieneba rocky sandy loam, 8 to 15 percent slopes, eroded	Complex	Not prime farmland

Appendix L:
Plant Species Documented in Project Survey Area

Appendix L: Plants Observed Onsite

PLANTS

Adoxaceae - Elderberry Family
Sambucus mexicana **-** Mexican elderberry

Agavaceae – Agave Family
Yucca schidigera - Mojave yucca
Yucca whipplei - our Lord's candle/chaparral yucca

Aizoacae – Iceplant Family
**Mesembryanthemum nodiflorum – slender-leaved iceplant*

Amaranthaceae – Amaranth Family
**Amaranthus albus* –tumbling pigweed

Anacardiaceae - Sumac Family
Rhus ovata **-** sugar bush
Rhus trilobata – shunkbrush
Toxicodendron diversilobum - poison oak
Schinus molle* **- Peruvian pepper tree/California pepper tree

Apiaceae - Carrot Family
**Conium maculatum* – poison hemlock
Daucus pusillus **-** wild carrot
Foeniculum vulgare* **- fennel

Apocynaceae - Dogbane Family
Asclepias californica – California milkweed
Funastrum cynanchoides spp. *heterophyllum***-** climbing milkweed
Nerium oleander* **- oleander

Arecaceae - Palm tree Family
Washingtonia robusta* **- Mexican fan palm

Asteraceae - Sunflower Family
Achillea millefolium **-** common yarrow
Acourtia microcephala - sacapellote
Anthemis cotula – mayweed
Ambrosia acanthicarpa - annual bursage
Ambrosia psilostachya - western ragweed
Artemisia californica **-** California sagebrush
Artemisia douglasiana – mugwort
Baccharis pilularis – coyote bush
Baccharis salicifolia – mulefat
Brickellia californica - California brickellbush
Carduus pycnocephalus* **- Italian thistle

Appendix L: Plants Observed Onsite

Centaurea melitensis* **- tocalote/malta star thistle
Centromadia pungens ssp. laevis [Hemizonia pungens ssp. leavis] – smooth tarplant
Centaurea solstitialis* **- yellow star thistle
**Chrysanthemum coronarium* - garland chrysanthemum
**Cirsium vulgare* – bull thistle
Conyza canadensis **-** horseweed
Corethrogyne filaginifolia **-** California aster
**Cotula coronopifolia* – brass buttons
Deinandra fasciculata [Hemizonia fasciculata] - clustered tarweed
Deinandra paniculata [Hemizonia paniculata] - San Diego tarweed
**Dimorphotheca sinuata* – African daisy
Ericameria palmeri var. *pachylepis* - grassland goldenbush
Erigeron foliosus var. *foliosus* – leafy daisy
Eriophyllum multicaule - many-stemmed woolly daisy
Eriophyllum confertiflorum – golden yarrow
Filago californica - California filago
Filago gallica* **- narrow**-**leaved filago
Gnaphalium californicum **-** California matchweed
Gnaphalium palustre - lowland cudweed
Hazardia squarrosa **-** saw toothed goldenbush
Hedypnois cretica* **- crete weed
Helianthus annuus **-** western sunflower
Helianthus gracilentus **-** slender sunflower
Hypochaeris glabra – smooth cat's ear
Hemizonia kelloggi – Kellogg's tarweed
Heterotheca grandiflora **-** telegraph weed
Isocoma menziesii var. *menziesii* **-** Menzies' goldenbush
Iva axillaris [Iva axillaris ssp. *robustior]*- western poverty weed
**Lactuca serriola* - prickly lettuce
Lasthenia coronaria - royal goldfields
Logfia filaginoides [Filago californica] - California cottonrose
Logfia gallica [Filago gallica] - daggerleaf cottonrose
Malacothrix saxatilis – cliff aster
**Matricaria discoidea [Chamomilla suaveolens]* - pineapple weed
**Matricaria occidentalis [Chamomilla occidentalis]* - valley pineapple weed
**Oncosiphon piluliferum* - stink net
Osmadenia tenella - osmadenia
Pluchea odorata - marsh fleabane
Pseudognaphalium beneolens [Gnaphalium canescens ssp. beneolens] – everlasting cudweed
Pseudognaphalium californicum [Gnaphalium californicum] - California everlasting
Pseudognaphalium canescens –Wright's cudweed
**Pseudognaphalium luteoalbum [Gnaphalium luteoalbum]* - weedy cudweed
Psilocarphus tenellus – woolly marbles
**Sonchus asper* ssp. *asper* - prickly sow thistle
Sonchus oleraceus* **- sow thistle
Stephanomeria exigua ssp. *exigua* - small wreath plant

Stephanomeria virgata - virgate wreath plant
Stylocline gnaphaloides - everlasting neststraw
Tetradymia comosa **-** cotton-thorn
Uropappus lindleyi – sliver puffs
Xanthium strumarium - cocklebur

Brassicaceae - Mustard Family
**Brassica nigra* - black mustard
**Brassica rapa* - field mustard
Descurainia sophia* **- flix weed
Heliotropium curassavicum - alkali heliotrope
Hirschfeldia incana* **- short pod mustard
Lepidium nitidum **-** shiny pepperweed
**Lepidium latifolium* - broad-leaved peppergrass
Nasturtium officinale [Rorippa nasturtium-aquaticum] - watercress
Raphanus sativus* **- wild radish
Sisymbrium altissimum* **- tumbling mustard
**Sisymbrium irio* - London rocket
**Sisymbrium orientale* - hare's ear cabbage

Boraginaceae - Borage Family
Amsinckia menziesii var. *intermedia* **-** common fiddleneck
Cryptantha intermedia **-** common cryptantha
Cryptantha micrantha var. lepidia - purple root cryptantha
Cryptantha microstachys **-** Tejon cryptantha
Emmenanthe penduliflora - whispering bells
Eriodictyon crassifolium – thick leaf yerba santa
Eucrypta chrysanthemifolia - common eucrypta
Nemophila menziesii - baby blue-eyes
Pectocarya penicillata - northern pectocarya
Phacelia cicutaria - caterpillar phacelia
Phacelia distans - common phacelia
Phacelia minor - Canterbury-bell
Phacelia ramosissima **-** branching phacelia
Plagiobothrys collinus var. *californicus* **-** California popcornflower
Plagiobothrys leptocladus - wire-stemmed popcornflower

Cactaceae –Cactus Family
Opuntia littoralis - coast prickly pear

Caryophyllaceae - Pink Family
**Herniaria hirsuta* ssp. *cinerea* - gray herniaria
Spergularia bocconei* **- Boccone's sand spurrey

Chenopodiaceae – Goosefoot Family
Atriplex argentea ssp. *expansa [Atriplex argentea* ssp. *mohavensis]* - Mojave silver scale

**Atriplex semibaccata* - Australian saltbush
**Atriplex suberecta* - sprawling saltbush
**Bassia hyssopifolia* - fivehook bassia
Chenopodium californicum - California goosefoot
**Dysphania ambrosioides [Chenopodium ambrosioides]* - Mexican tea
**Salsola tragus* - Russian thistle

Cistaceae - Rock-Rose Family
Helianthemum scoparium **-** bisbee peak rushrose

Convolvulaceae - Morning Glory Family
Calystegia macrostegia **-** island false bindweed
**Convolvulus arvensis* - bindweed
Cressa truxillensis - alkali weed
Cuscuta californica - chaparral dodder

Crassulaceae - Dudleya Family
Crassula aquatic **–** common pigmy weed
Dudleya lanceolata **–** lance-leaved dudleya
Dudleya pulverulenta **-** chalk dudleya

Cucurbitaceae - Gourd Family
Cucurbita foetidissima – calabazilla
Cucurbita palmata **-** coyote gourd
Marah fabaceus **–** California manroot
Marah macrocarpus **-** Chilicothe

Cuscutaceae - Dodder Family
Cuscuta californica **-** California dodder/chaparral dodder

Cyperaceae - Sedge Family
Bolboschoenus maritimus [Scirpus maritimus] - alkali bulrush
Cyperus eragrostis - tall umbrella-sedge
Eleocharis macrostachya - perennial spike rush
Eleocharis parishii **-** Parish's spike-rush
Schoenoplectus californicus [Scirpus californicus] - southern bulrush

Dennstaedtiaceae - Bracken Fern Family
Pteridium aquilinum – western bracken fern

Euphorbiaceae - Spurge Family
Chamaesyce albomarginata - rattlesnake spurge
Croton setigerus **–** dove weed
Ricinus communis* **- castor bean

Ericaceae - Heath Family

Xylococcus bicolor **-** mission manzanita

Fabaceae - Pea Family
Astralgus pomonensis - Pomona locoweed
Lotus hamatus **-** grab lotus
Lotus purshianus - Spanish clover
Lotus scoparius **-** deerweed
Lotus strigosus **-** Strigose lotus
Lupinus biocolor **-** miniature lupine
Lupinus microcarpus var. *densiflorus* - dense-flowered chick lupine
Lupinus succulentus - arroyo lupine
Lupinus truncates - truncate lupine /collar lupine
**Medicago lupulina* - black medic
**Medicago polymorpha* - California burclover
**Melilotus indica* - sourclover
**Vicia villosa* - hairy vetch/winter vetch

Fagaceae - Beech Family
Quercus agrifolia **-** coast live oak/ interior live oak
Quercus berberidifolia **-** scrub oak

Frankeniaceae – Frankenia Family
Frankenia salina **-** alkali heath

Geraniaceae - Geranium Family
Centaurium venustum **-** beautiful century
**Erodium botrys* - long-beaked filaree
Erodium cicutarium* **- red**-**stem filaree/stork's bill

Iridaceae - Iris Family
Sisyrinchium bellum **-** blue-eyed grass

Juncaceae - Rush Family
Juncus bufonius **-** common toad rush
Juncus Mexicana - wrinkled rush
Juncus xiphioides iris **-** leaved rush

Lamiaceae - Mint Family
**Marrubium vulgare* - horehound
Salvia apiana **-** white sage
Salvia columbariae - chia
Salvia mellifera **-** black sage
Scutellaria tuberosa - Danny's skullcap
Stachys albens – white hedge-nettle
Stachys ajugoides var. *rigida* – rigid hedge nettle

Lauraceae - Laurel family

**Persea americana* - avocado tree

Liliaceae - Lily Family
Calochortus splendens - splendid mariposa lily
Dichelostemma capitatum – blue dicks

Lythraceae – Loosestrife Family
**Lythrum hyssopifolia* - grass poly

Malvaceae - Mallow Family
Malacothamnus fasciculatus - chaparral mallow
**Malva parviflora* - cheeseweed
Malvella leprosa - alkali mallow
Sidalcea malviflora **-** checker mallow

Myrsinaceae – Myrsine Family
**Anagallis arvensis* - scarlet pimpernel

Myrtaceae - Myrtle family
**Eucalyptus globulus* – blue gum
**Eucalyptus polyanthemos* - silver dollar gum

Nyctaginaceae - Four-O'Clock Family
Mirabilis lavis - wishbone bush

Onagraceae - Evening Primrose Family
Camissonia bistorta **–** California suncup
Camissonia campestris **-** Mojave suncup
Camissonia micrantha - small primrose
Clarkia epilobioides - willow-herb clarkia
Clarkia purpurea **-** purple clarkia
Epilobium brachycarpum - upland willow-herb
Epilobium ciliatum willow-herb

Orobanchaceae - Broomrape Family
Castilleja affinis ssp. *affinis* - coast paintbrush
Cordylanthus rigidus – rigid bird's beak
Galium aparine **-** common bedstraw

Oleaceae - Olive Family
Olea europaea* **- olive tree

Papaveraceae – Poppy Family
Eschscholzia californica - California poppy

Appendix L: Plants Observed Onsite

Plantaginaceae - Plantain Family
Plantago erecta - dwarf plantain / California plantain
Plantago lanceolata* **- English plantain
Veronica peregrina ssp. *xalapensis* - purslane speedwell

Phrymaceae – Lopseed Family
Mimulus aurantiacus - bush monkey flower
Mimulus brevipes - slope semaphore
Mimulus guttatus - seep monkeyflower

Pinaceae - Pine Family
Pinus* spp. **- pine tree

Platanaceae - Plane-tree Family
Platanus racemosa **-** western sycamore

Plumbaginaceae - Plumbago or Leadwort Family
Limonium perezi* **- Canarian sea lavender

Poaceae - Grass Family
Artstida purpurea purple threeawn
Avena barbata* **- slender wild oat
Avena fatua* **- wild oat
Bromus diandrus* **– ripgut brome
Bromus hordeaceus* **- soft chess
Bromus madritensis* ssp. *rubens* **- red brome/foxtail chess
**Bromus rubens* - red brome
**Bromus tectorum* - downey brome
**Cortaderia jubata - pampas* grass
**Crypsis schoenoides* - swamp prickle grass
Deschampsia danthonioides - annual hairgrass
Distichlis spicata - salt grass
Elymus condensatus **-** giant wildrye
Elymus triticoides [Leymus triticoides] - beardless wild rye
**Festuca myuros [Vulpia myuros* var. *hirsuta]* - foxtail fescue
**Hordeum marinum ssp. gussoneanum* - Mediterranean barley
**Hordeum murinum* var. *leporinum* - hare barley
**Koeleria macrantha* - junegrass
**Lolium multiflorum* - Italian rye grass
Lolium perenne* **- perennial ryegrass
Melica imperfect - little California melic grass
Muhlenbergia rigens **-** deergrass
Pennisetum setaceum* **- fountain grass
**Phalaris minor* - little-seed canary grass
**Phalaris paradoxa* - paradox canary grass
Piptatherum miliaceum* **– smilo grass

Poa annua - annual bluegrass
**Polypogon monspeliensis* - annual beard grass/ rabbits foot grass
**Schismus barbatus* - common Mediterranean grass
Stipa coronata [Achnatherum coronatum] - crested needlegrass
Stipa lepida [Nassella lepida] - foothill needlegrass
Stipa pulchra [Nassella pulchra] - purple needlegrass
**Triticum aestivum* - wheat
**Vulpia myuros* - rattail fescue

Polemoniaceae - Phlox Family
Eriastrum sapphirinum - annual woollystar/sapphire woollystar
Gilia angelensis - chaparral gilia
Linanthus dianthiflorus – fringed linanthus
Navarretia atractyloides - holly-leaved skunkweed
Navarretia hamata - hooked navarretia

Polygonaceae - Buckwheat Family
Chorizanthe fimbriata - fringed spineflower
Chorizanthe parryi var. parryi - Parry's spineflower
Chorizanthe polygonoides - knotweed spineflower
Chorizanthe procumbens - prostrate spineflower
Eriogonum fasciculatum var. *fasciculatum* - California buckwheat
Erigonum gracile - slender buckwheat
Lastarriaea coriacea - leatherm-spineflower
**Polygonum argyrocoleon* - Persian knotweed
**Polygonum aviculare ssp. depressum [Polygonum arenastrum]* - common knotweed
Pterostegia drymariodes – pterostegia
**Rumex acetosella* - sheep sorrel
**Rumex crispus* - curly dock
Rumex hymenosepalus - wild rhubarb
Rumex salicifolius var. *salicifolius* - willow leaved dock

Portulacaceae – Purslane Family
Claytonia perfoliata - miner's lettuce

Paeoniaceae – Peony Family
Paeonia californica - California peony

Primulaceae - Primrose Family
**Anagallis arvensis* - scarlet pimpernel

Pteridaceae – Brake Family
Cheilanthes newberryi - cotton fern
Notholaena californica - California cloak-fern
Pellaea andromedifolia - coffee fern
Pellaea mucronata - bird's foot fern

Ranunculaceae - Buttercup or Crowfoot Family
Delphinium parryi ssp. *parryi* - Parry's larkspur/blue larkspur

Rhamnaceae – Buckthorn Family
Rhamnus crocea - spiny redberry
Rhamnus californica - California coffeeberry

Rosaceae - Family
Adenostoma fasciculatum **-** chamise
Heteromeles arbutifolia **–** toyon

Rubiaceae – Coffee or Madder Family
Galium angustifolium - narrowly leaved bedstraw
Galium aparine - common bedstraw

Salicaceae – Willow Family
Populus fremontii ssp. fremontii - Fremont cottonwood
Salix gooddingii - Goodding's black willow
Salix lasiolepis - arroyo willow
Salix exigua - sandbar willow
Salix laevigata - red willow

Saururacea – Lizard Tail Family
Anemopsis californica - yerba mansa

Scrophulariaceae - Figwort Family
Antirrhinum coulterianum - white snapdragon
Antirrhinum nuttallianum ssp. *nuttallianum* - Nuttall's snapdragon
Mimulus aurantiacus - bush monkey flower
Mimulus brevipes - slope semaphore
Mimulus guttatus - seep monkeyflower
Penstemon spectabilis **-** showy Penstemon
Penstemon centranthifolius- scarlet bugler
Penstemon heterophyllus- foothill penstemon
Penstemon spectabilis - showy penstemon
Keckiella antirrhinoides ssp. *antirrhinoides* - yellow bush-penstemon
Scrophulraia californica –California figwort
Verbascum virgatum* **- wand mullein

Simaroubaceae - Quassia or Simarouba Family
Ailanthus altissima* **- tree of heaven

Solanaceae-Night Shade Family
Datura wrightii **-** jimson weed
Nicotiana glauca* **- tree tobacco
Solanum xanti **-** chaparral nightshade

Solanum parishii **-** Parish's purple nightshade

Tamaricaceae – Tamarisk Family
**Taxarix ramosissima* – Mediterranean tamarix

Tropaeolaceae - Nasturtium Family
Tropaeolum majus* **- garden nasturtium

Typhaceae – Cattail Family
Typha domingensis – southern cattail
Typha latifolia – broad-leaved cattail

Uticaceae – Nettle Family
Hesperocnide tenella **–** western nettle
Uritca dioica ssp. holosericea **–** hoary nettle

Vitaceae - Wine Family
Vitis girdiana **-** Southern California grape/desert wild grape

Legend
* = Non-native species

Appendix M:
Animal Species Documented in Vicinity of Valley South Subtransmission Project

APPENDIX M
Animal Species Documented in Vicinity of Valley South Subtransmission Project

INSECTA

LEPIDOPTERA (BUTTERFLIES)

Papilionidae (Parnassians and Swallowtails)
Anise Swallowtail *Papilio zelicaon*
Western Tiger Swallowtail *Papilio rutulus*

Pieridae (Whites and Sulphurs)
Checkered White *Pontia protodice*
Cabbage White *Pieris rapae* *

Lycaenidae (Gossamer-Wings)
Great Copper *Lycaena xanthoides*
Western Pygmy-Blue *Brephidium exile*
Western Tailed Blue *Everes amyntula*
Bernardino Square-Spotted Blue *Euphilotes battoides bernardino*
Acmon Blue *Plebejus acmon*

Riodinidae (Metalmarks)
Behr's Metalmark *Apodemia virgulti*

Nymphalidae (Brushfoots)
Mourning Cloak *Nymphalis antiopa*
Painted Lady *Vanessa cardui*
Lorquin's Admiral *Limenitis lorquini*

Hesperiidae (Skippers)
White Checkered-Skipper *Pyrgus albescens*

VERTEBRATA

AMPHIBIA

Plethodontidae (Lungless Salamanders)
Garden Slender Salamander *Batrachoseps major major*

Bufonidae (True Toads)
Western Toad *Anaxyrus boreas halophilus*

Hylidae (Tree Frogs)
California Chorus Frog *Pseudacris cadaverina*
Pacific Chorus Frog *Pseudacris regilla*

Pelobatidae (Spadefoots)
Western Spadefoot *Spea hammondii*

Ranidae (True Frogs)
American Bullfrog *Rana catesbeiana* *

REPTILIA

Emydidae (Box and Water Turtles)
Red-eared Slider *Trachemys scripta* *

Anguidae
Southern Alligator Lizard *Elgaria multicarinata webbi*

Phrynosomatidae
San Diego (Coast) Horned Lizard *Phrynosoma coronatum*
Western Fence Lizard *Sceloporus occidentalis longipes*
Granite Spiny Lizard *Sceloporus orcutti*
Western Side-blotched Lizard *Uta stansburiana elegans*

Scincidae (Skinks)
Western Skink *Eumeces skiltonianus interparietalis*

Teiidae (Whiptails)
Orange-throated Whiptail *Aspidoscelis hyperythra*
Coastal Western Whiptail *Aspidoscelis tigris stejnegeri*

Colubridae
Glossy Snake *Arizona elegans*
California Kingsnake *Lampropeltis getula californiae*
Red Coachwhip *Masticophis flagellum piceus*
San Diego Gopher Snake *Pituophis catenifer annectens*
Two-striped Garter Snake *Thamnophis hammondii*

Viperidae (Pit vipers)
Northern Red Diamond Rattlesnake *Crotalus ruber ruber*
Southern Pacific Rattlesnake *Crotalus oreganus helleri*

AVES

Anatidae (Ducks, Geese, and Swans)
Canada Goose *Branta canadensis*
Mallard *Anas platyrhynchos*
Lesser Scaup *Aythya affinis*
Bufflehead *Bucephala albeola*
Ruddy Duck *Oxyura jamaicensis*

Odontophoridae (Partridges and Quail)
California Quail *Callipepla californica*

Podicipedidae (Grebes)
Eared Grebe *Podiceps nigricollis*

Ardeidae (Herons)
Great Blue Heron *Ardea herodias*
Great Egret *Ardea alba*
Snowy Egret *Egretta thula*
Cattle Egret *Bubulcus ibis*
Green Heron *Butorides virescens*

Threskiornithidae (Ibises)
White-faced Ibis *Plegadis chihi*

Cathartidae (New World Vultures)
Turkey Vulture *Cathartes aura*

Accipitridae (Kites, Harriers, Hawks, Buteos, and Eagles)
White-tailed Kite *Elanus leucurus*
Northern Harrier *Circus cyaneus*
Cooper's Hawk *Accipiter cooperii*
Red-shouldered Hawk *Buteo lineatus*
Red-tailed Hawk *Buteo jamaicensis*
Golden Eagle *Aquila chrysaetos*

Falconidae (Falcons)
American Kestrel *Falco sparverius*
Prairie Falcon *Falco mexicanus*

Rallidae (Rails)
Virginia Rail *Rallus limicola*
American Coot *Fulica Americana*

Charadriidae (Plovers)
Killdeer *Charadrius vociferus*

Recurvirostridae (Avocets and Stilts)
Black-necked Stilt *Himantopus mexicanus*
American Avocet *Recurvirostra americana*

Scolopacidae (Sandpipers)
Greater Yellowlegs *Tringa melanoleuca*
Marbled Godwit *Limosa fedoa*
Western Sandpiper *Calidris mauri*
Long-billed Dowitcher *Limnodromus scolopaceus*

Columbidae (Pigeons and Doves)
Rock Pigeon *Columba livia* *
Eurasian Collared Dove *Streptopelia decaocto* *
Mourning Dove *Zenaida macroura*

Cuculidae (Cuckoos and allies)

Greater Roadrunner *Geococcyx californianus*

Tytonidae (Barn Owls)
Barn Owl *Tyto alba*

Strigidae (True Owls)
Burrowing Owl *Athene cunicularia*

Apodidae (Swifts)
White-throated Swift *Aeronautes saxatalis*

Trochilidae (Hummingbirds)
Anna's Hummingbird *Calypte anna*
Costa's Hummingbird *Calypte costae*
Allen's Hummingbird *Selasphorus sasin*

Picidae (Woodpeckers)
Nuttall's Woodpecker *Picoides nuttallii*

Tyrannidae (Flycatchers)
Willow Flycatcher *Empidonax traillii*
Black Phoebe *Sayornis nigricans*
Say's Phoebe *Sayornis saya*
Ash-throated Flycatcher *Myiarchus cinerascens*
Cassin's Kingbird *Tyrannus vociferans*
Western Kingbird *Tyrannus verticalis*

Laniidae (Shrikes)
Loggerhead Shrike *Lanius ludovicianus*

Vireonidae (Vireos)
Bell's Vireo *Vireo bellii*

Corvidae (Jays, Ravens, Nutcrackers, and Crows)
Western Scrub-jay *Aphelocoma californica*
American Crow *Corvus brachyrhynchos*
Common Raven *Corvus corax*

Alaudidae (Larks)
Horned Lark *Eremophila alpestris*

Hirundinidae (Swallows)
Northern Rough-winged Swallow *Stelgidopteryx serripennis*
Cliff Swallow *Petrochelidon pyrrhonota*
Barn Swallow *Hirundo rustica*

Paridae (Chickadees and Titmice)
Oak Titmouse *Baeolophus inornatus*

Aegithalidae (Bushtits)
Bushtit *Psaltriparus minimus*

Troglodytidae (Wrens)
Rock Wren *Salpinctes obsoletus*
Canyon Wren *Catherpes mexicanus*
Bewick's Wren *Thryomanes bewickii*
House Wren *Troglodytes aedon*

Polioptilidae (Gnatwrens and Gnatcatchers)
California Gnatcatcher *Polioptila californica*

Sylviidae (Wrentit and allies)
Wrentit *Chamaea fasciata*

Turdidae (Thrushes)
Western Bluebird *Sialia mexicana*
American Robin *Turdus migratorius*

Mimidae (Mockingbirds and Thrashers)
Northern Mockingbird *Mimus polyglottos*
California Thrasher *Toxostoma redivivum*

Sturnidae (Starlings and Mynas)
European Starling *Sturnus vulgaris* *

Motacillidae (Wagtails and Pipits)
American Pipit *Anthus rubescens*

Bombycillidae (Waxwings)
Cedar Waxwing *Bombycilla cedrorum*

Ptilogonatidae (Silky Flycatchers)
Phainopepla *Phainopepla nitens*

Parulidae (Wood Warblers)
Orange-crowned Warbler *Oreothlypis celata*
Common Yellowthroat *Geothlypis trichas*
Yellow Warbler *Setophaga petechia*
Yellow-rumped Warbler *Setophaga coronata*
Wilson's Warbler *Cardellina pusilla*
Yellow-breasted Chat *Icteria virens*

Emberizidae (Sparrows and allies)
Spotted Towhee *Pipilo maculatus*
Rufous-crowned Sparrow *Aimophila ruficeps*
California Towhee *Melozone crissalis*
Vesper Sparrow *Pooecetes gramineus*
Lark Sparrow *Chondestes grammacus*
Sage Sparrow *Amphispiza belli*
Savannah Sparrow *Passerculus sandwichensis*
Song Sparrow *Melospiza melodia*

Lincoln's Sparrow *Melospiza lincolnii*
White-crowned Sparrow *Zonotrichia leucophrys*

Cardinalidae (Tanagers, Grosbeaks, and Buntings)
Black-headed Grosbeak *Pheucticus melanocephalus*
Blue Grosbeak *Passerina caerulea*
Lazuli Bunting *Passerina amoena*

Icteridae (Blackbirds, Cowbirds, Orioles, and allies)
Red-winged Blackbird *Agelaius phoeniceus*
Western Meadowlark *Sturnella neglecta*
Brewer's Blackbird *Euphagus cyanocephalus*
Great-tailed Grackle *Quiscalus mexicanus*
Brown-headed Cowbird *Molothrus ater*
Hooded Oriole *Icterus cucullatus*
Bullock's Oriole *Icterus bullockii*

Fringillidae (Finches)
House Finch *Carpodacus mexicanus*
Lesser Goldfinch *Spinus psaltria*
Lawrence's Goldfinch *Spinus lawrencei*
American Goldfinch *Spinus tristis*

Passeridae (Old World Sparrows)
House Sparrow *Passer domesticus* *

MAMMALIA

Canidae (Dogs)
Coyote *Canis latrans*

Procyonidae (Raccoons and Allies)
Raccoon *Procyon lotor*

Mustelidae (Weasels, Skunks, Badgers, Otters, and Allies)
Long-tailed Weasel *Mustela frenata*

Leporidae (Rabbits and Hares)
Desert Cottontail *Sylvilagus auduboni*
Brush Rabbit *Sylvilagus bachmani*
Black-tailed Hare *Lepus californicus*

Sciuridae (Squirrels)
California Ground Squirrel *Spermophilus beecheyi*

Geomyidae (Pocket Gophers, Kangaroo Rats, Kangaroo Mice, and Pocket Mice)
Stephen's Kangaroo Rat *Dipodomys stephensi*
Dulzura Kangaroo Rat *Dipodomys simulans*

Los Angeles Pocket Mouse *Perognathus longimembris brevinasus*
Northwestern San Diego Pocket Mouse *Chaetodipus fallax fallax*

Muridae (Mice and Rats)
Desert Woodrat *Neotoma lepida*
Dusky-footed Woodrat *Neotoma fuscipes*
Southern Grasshopper Mouse *Onychomys torridus ramona*
Brush Mouse *Peromyscus boylii*
Parasitic Mouse *Peromyscus californicus*
Cactus Mouse *Peromyscus eremicus*
Deer Mouse *Peromyscus maniculatus*
Harvest Mouse *Reithrodontomys megalotus*
California Vole *Microtus californicus*
House Mouse *Mus musculus* *

*Non-native species